```
Connecting via Winsock to Dialog


Logging in to Dialog

Trying 31060000009999...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
 ********
ENTER PASSWORD:
 ********
Welcome to DIALOG

Dialog level 05.31.00D

Last logoff:  19apr11 11:43:04
Logon file405 19apr11 12:34:18
DETAIL set on
HILIGHT set on as '****'
COST        = SHORT.
MEDIOBAB is set ON as an alias for 155, 347, 144, 35, 5, 74, 71, 357, 6,
351, 24, 136, 399, 315, 358, 73, 34, 434
FISH is set ON as an alias for 10, 143, 203, 50, 28, 35, 351, 24, 136, 44,
399, 78
NUTRACEUT is set ON as an alias for 79, 164, 91, 53, 51, 351, 399, 467,149
MEDBIOFT is set ON as an alias for 349, 444, 457
* * *
SYSTEM:HOME
Cost is in DialUnits
Menu System II: D2 version 1.8.0 term=ASCII
                      *** DIALOG HOMEBASE(SM) Main Menu ***

 Information:
  1.  Announcements (new files, reloads, etc.)
  2.  Database, Rates, & Command Descriptions
  3.  Help in Choosing Databases for Your Topic
  4.  Customer Services (telephone assistance, training, seminars, etc.)
  5.  Product Descriptions

 Connections:
  6.  DIALOG(R) Document Delivery
  7.  Data Star(R)

    (c) 2003 Dialog, a Thomson business.      All rights reserved.

      /H = Help            /L = Logoff          /NOMENU = Command Mode


Enter an option number to view information or to connect to an online
 service.  Enter a BEGIN command plus a file number to search a database
(e.g., B1 for ERIC).
? b mediobab

>>>         358 does not exist
>>>1 of the specified files is not available
      19apr11 12:34:25 User226352 Session D1308.1
     $0.00  Estimated cost FileHomeBase
     $0.05  TELNET
     $0.05  Estimated cost this search
     $0.05  Estimated total session cost   0.263 DialUnits
```

```
SYSTEM:OS  - DIALOG OneSearch
  File 155:MEDLINE(R) 1950-2011/Apr 15
         (c) format only 2011 Dialog
*File 155: Medline has been reloaded with the 2011 MeSH
thesaurus.
  File 347:JAPIO Dec 1976-2010/Dec(Updated 110323)
         (c) 2011 JPO & JAPIO
  File 144:Pascal 1973-2011/Apr W2
         (c) 2011 INIST/CNRS
  File  35:Dissertation Abs Online 1861-2011/Mar
         (c) 2011 ProQuest Info&Learning
  File   5:Biosis Previews(R) 1926-2011/Apr W2
         (c) 2011 The Thomson Corporation
  File  74:Int.Pharm.Abs 1970-2011/Apr B2
         (c) 2011 The Thomson Corporation
  File  71:ELSEVIER BIOBASE 1994-2011/Apr W3
         (c) 2011 Elsevier B.V.
  File 357:Derwent Biotech Res. _1982-2011/Nov W4
         (c) 2011 Thomson Reuters
*File 357: This file will no longer be produced after 12/31/2010. For
more information, see HELP NEWS 357.
  File   6:NTIS 1964-2011/Apr W4
         (c) 2011 NTIS, Intl Cpyrght All Rights Res
  File 351:Derwent WPI 1963-2011/UD=201125
         (c) 2011 Thomson Reuters
  File  24:CSA Life Sciences Abstracts 1966-2011/Mar
         (c) 2011 CSA.
  File 136:BioEngineering Abstracts 1966-2007/Jan
         (c) 2007 CSA.
*File 136: This file is closed.
  File 399:CA SEARCH(R) 1967-2010/UD=15417
         (c) 2011 American Chemical Society
*File 399: Use is subject to the terms of your user/customer agreement.
IPCR/8 classification codes now searchable as IC=. See HELP NEWSIPCR.
  File 315:ChemEng & Biotec Abs 1970-2011/May
         (c) 2011 DECHEMA
*File 315: December 2007 - the reloaded database is now online.  Please
consult the updated Bluesheet for details on new and changed fields.
  File  73:EMBASE 1974-2011/Apr 19
         (c) 2011 Elsevier B.V.
*File  73: The 2011 Thesaurus has been installed with UD20110407.
  File  34:SciSearch(R) Cited Ref Sci 1990-2011/Apr W2
         (c) 2011 The Thomson Corp
  File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 2006 The Thomson Corp

      Set  Items  Description
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? s W135 and (meningococcal or meningitidis or neisseria) and conjugate

155: MEDLINE(R)_1950-2011/Apr 15
           351  W135
         31353  CONJUGATE
          8766  MENINGITIDIS
         11175  MENINGOCOCCAL
         19779  NEISSERIA
            72  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

347: JAPIO_Dec 1976-2010/Dec(Updated 110323)
             3  W135
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```
            20  MENINGOCOCCAL
            46  MENINGITIDIS
            68  NEISSERIA
          9446  CONJUGATE
             1  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

144: Pascal_1973-2011/Apr W2
           186  W135
         23856  CONJUGATE
          3425  MENINGOCOCCAL
          4609  MENINGITIDIS
          9934  NEISSERIA
            24  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

 35: Dissertation Abs Online_1861-2011/Mar
             3  W135
            82  MENINGOCOCCAL
           173  MENINGITIDIS
           510  NEISSERIA
          4744  CONJUGATE
             0  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

  5: Biosis Previews(R)_1926-2011/Apr W2
           260  W135
         34350  CONJUGATE
          5968  MENINGOCOCCAL
          8700  MENINGITIDIS
         21007  NEISSERIA
            38  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

 74: Int.Pharm.Abs_1970-2011/Apr B2
             8  W135
           116  MENINGITIDIS
           375  MENINGOCOCCAL
           342  NEISSERIA
          1578  CONJUGATE
             5  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

 71: ELSEVIER BIOBASE_1994-2011/Apr W3
           155  W135
         11125  CONJUGATE
          2333  MENINGOCOCCAL
          2686  MENINGITIDIS
          4755  NEISSERIA
            30  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

357: Derwent Biotech Res.__1982-2011/Nov W4
            27  W135
           218  MENINGOCOCCAL
           634  MENINGITIDIS
          1162  NEISSERIA
          5360  CONJUGATE
            10  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

  6: NTIS_1964-2011/Apr W4
```

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             5  W135
           199  MENINGOCOCCAL
           318  MENINGITIDIS
           457  NEISSERIA
          2648  CONJUGATE
             0  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

351: Derwent WPI_1963-2011/UD=201125
            88  W135
           390  MENINGOCOCCAL
           979  MENINGITIDIS
          2261  NEISSERIA
         42178  CONJUGATE
            48  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

 24: CSA Life Sciences Abstracts_1966-2011/Mar
           174  W135
         10358  CONJUGATE
          2962  MENINGOCOCCAL
          4582  MENINGITIDIS
          8899  NEISSERIA
            29  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

136: BioEngineering Abstracts_1966-2007/Jan
             2  W135
             6  MENINGOCOCCAL
             7  MENINGITIDIS
            16  NEISSERIA
           683  CONJUGATE
             0  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

399: CA SEARCH(R)_1967-2010/UD=15417
            46  W135
          1270  MENINGOCOCCAL
          5445  MENINGITIDIS
         10662  NEISSERIA
         48529  CONJUGATE
             6  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

315: ChemEng & Biotec Abs_1970-2011/May
             1  W135
            14  MENINGOCOCCAL
            34  MENINGITIDIS
            55  NEISSERIA
           624  CONJUGATE
             0  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE

 73: EMBASE_1974-2011/Apr 19
           385  W135
         37047  CONJUGATE
          8430  MENINGOCOCCAL
         11585  MENINGITIDIS
         24752  NEISSERIA
            77  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                CONJUGATE
```

```
 34: SciSearch(R) Cited Ref Sci_1990-2011/Apr W2
             261  W135
            6737  MENINGITIDIS
            5919  MENINGOCOCCAL
           12773  NEISSERIA
           57766  CONJUGATE
              64  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                  CONJUGATE

434: SciSearch(R) Cited Ref Sci_1974-1989/Dec
              18  W135
             786  MENINGITIDIS
            1946  MENINGOCOCCAL
            3181  NEISSERIA
            6092  CONJUGATE
               0  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                  CONJUGATE

TOTAL: FILES 155,347,144 and ...
            1973  W135
           44732  MENINGOCOCCAL
           56203  MENINGITIDIS
          120613  NEISSERIA
          327737  CONJUGATE
      S1      404  W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND
                  CONJUGATE
? rd s1

>>>Duplicate detection is not supported for File 347.

>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
      S2     177  RD S1  (unique items)
? s s2 not PY>2003

155: MEDLINE(R)_1950-2011/Apr 15
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         5138264  PY>2003
              20  S2 NOT PY>2003

347: JAPIO_Dec 1976-2010/Dec(Updated 110323)
               1  S2
         2281569  PY>2003
               0  S2 NOT PY>2003

144: Pascal_1973-2011/Apr W2
               3  S2
         3436769  PY>2003
               0  S2 NOT PY>2003

 35: Dissertation Abs Online_1861-2011/Mar
               0  S2
          449979  PY>2003
               0  S2 NOT PY>2003

  5: Biosis Previews(R)_1926-2011/Apr W2
              10  S2
         4375765  PY>2003
               3  S2 NOT PY>2003

 74: Int.Pharm.Abs_1970-2011/Apr B2
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             1  S2
        143785  PY>2003
             0  S2 NOT PY>2003

 71: ELSEVIER BIOBASE_1994-2011/Apr W3
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             0  S2 NOT PY>2003

357: Derwent Biotech Res.__1982-2011/Nov W4
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             1  S2 NOT PY>2003

  6: NTIS_1964-2011/Apr W4
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        173840  PY>2003
             0  S2 NOT PY>2003

351: Derwent WPI_1963-2011/UD=201125
Processing
            48  S2
       8973478  PY>2003
             1  S2 NOT PY>2003

 24: CSA Life Sciences Abstracts_1966-2011/Mar
             2  S2
       1585757  PY>2003
             1  S2 NOT PY>2003

136: BioEngineering Abstracts_1966-2007/Jan
             0  S2
         24064  PY>2003
             0  S2 NOT PY>2003

399: CA SEARCH(R)_1967-2010/UD=15417
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             0  S2 NOT PY>2003

315: ChemEng & Biotec Abs_1970-2011/May
             0  S2
         70385  PY>2003
             0  S2 NOT PY>2003

 73: EMBASE_1974-2011/Apr 19
             6  S2
       5851632  PY>2003
             2  S2 NOT PY>2003

 34: SciSearch(R) Cited Ref Sci_1990-2011/Apr W2
            22  S2
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             7  S2 NOT PY>2003

434: SciSearch(R) Cited Ref Sci_1974-1989/Dec
             0  S2
             0  PY>2003
             0  S2 NOT PY>2003

TOTAL: FILES 155,347,144 and ...
           177  S2
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       51963999  PY>2003
     S3      35  S2 NOT PY>2003
? rd s3

>>>Duplicate detection is not supported for File 347.

>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
     S4      35  RD S3  (unique items)
? e au=costantino, paolo

Ref   File    Items   Total  Index-term
E1      24              3  AU=COSTANTINO, P*
E2     399              2  AU=COSTANTINO, PAOLA
       351         13        AU=COSTANTINO, PAOLO
        24          8        AU=COSTANTINO, PAOLO
       399         87        AU=COSTANTINO, PAOLO
E3  -------            108 *AU=COSTANTINO, PAOLO
E4     399              2  AU=COSTANTINO, PAOLO A.
E5     351              2  AU=COSTANTINO,  PAOLO,  CHIRON  S.P.A.,  VIA
                           FIORENTI
E6     351              2  AU=COSTANTINO,  PAOLO,  CHIRON  S.R.L.,  VIA
                           FIORENTI
E7     351              1  AU=COSTANTINO, PAOLO, CHIRON SRL
E8     351              1  AU=COSTANTINO, PAOLO, COLLE VAL DIELSA, IT
E9     351              2  AU=COSTANTINO, PAOLO, IT
E10    351              2  AU=COSTANTINO,  PAOLO,  NOVARTIS  VACCINES AND
                           DIAGN
E11    351              1  AU=COSTANTINO,  PAOLO,  NOVARTIS  VACCINES AND
                           DIAGO
E12    351              1  AU=COSTANTINO,  PAOLO,  NOVARTIS VACCINES, AND
                           DIAG
          Enter P or PAGE for more
? s e2 and e3

155: MEDLINE(R)_1950-2011/Apr 15
             0  AU=COSTANTINO, PAOLO
             0  AU=COSTANTINO, PAOLA
             0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

347: JAPIO_Dec 1976-2010/Dec(Updated 110323)
             0  AU=COSTANTINO, PAOLO
             0  AU=COSTANTINO, PAOLA
             0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

144: Pascal_1973-2011/Apr W2
             0  AU=COSTANTINO, PAOLO
             0  AU=COSTANTINO, PAOLA
             0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

 35: Dissertation Abs Online_1861-2011/Mar
             0  AU=COSTANTINO, PAOLO
             0  AU=COSTANTINO, PAOLA
             0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

  5: Biosis Previews(R)_1926-2011/Apr W2
             0  AU=COSTANTINO, PAOLO
             0  AU=COSTANTINO, PAOLA
             0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

 74: Int.Pharm.Abs_1970-2011/Apr B2
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              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

 71: ELSEVIER BIOBASE_1994-2011/Apr W3
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

357: Derwent Biotech Res.__1982-2011/Nov W4
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

  6: NTIS_1964-2011/Apr W4
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

351: Derwent WPI_1963-2011/UD=201125
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             13  AU=COSTANTINO, PAOLO
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

 24: CSA Life Sciences Abstracts_1966-2011/Mar
              0  AU=COSTANTINO, PAOLA
              8  AU=COSTANTINO, PAOLO
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

136: BioEngineering Abstracts_1966-2007/Jan
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

399: CA SEARCH(R)_1967-2010/UD=15417
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             87  AU=COSTANTINO, PAOLO
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

315: ChemEng & Biotec Abs_1970-2011/May
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

 73: EMBASE_1974-2011/Apr 19
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

 34: SciSearch(R) Cited Ref Sci_1990-2011/Apr W2
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

434: SciSearch(R) Cited Ref Sci_1974-1989/Dec
              0  AU=COSTANTINO, PAOLO
              0  AU=COSTANTINO, PAOLA
              0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'

TOTAL: FILES 155,347,144 and ...
              2  AU=COSTANTINO, PAOLA
            108  AU=COSTANTINO, PAOLO
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      S5       0  AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'
? e au=berti, francesco

Ref   File    Items   Total  Index-term
E1     351              2  AU=BERTI, FILIPPO
        24        1          AU=BERTI, FRANCESCA
       399        3          AU=BERTI, FRANCESCA
E2  -------              4  AU=BERTI, FRANCESCA
       351       12          AU=BERTI, FRANCESCO
        24        6          AU=BERTI, FRANCESCO
       399       36          AU=BERTI, FRANCESCO
E3  -------             54 *AU=BERTI, FRANCESCO
E4     351               1  AU=BERTI,   FRANCESCO,   CHIRON   S.R.L.,  VIA
                            FIORENTIN
E5     351               1  AU=BERTI, FRANCESCO, CHIRON VACCINES
       351        3          AU=BERTI, FRANCO
        24        1          AU=BERTI, FRANCO
       399        5          AU=BERTI, FRANCO
E6  -------              9  AU=BERTI, FRANCO
E7     351               1  AU=BERTI, FRANCO, SAN DONATO MILANESE, IT
E8     351               1  AU=BERTI,   FRANCO,  VIA  ISONZO,  9,  I-20090
                            BUCCINAS
E9     351               1  AU=BERTI,  FRANCO,  VIA TRIESTE, 16/A, I-20097
                            SAN
E10    351               1  AU=BERTI,  FRANCO,  VIALE VALGANNA 84, I-21100
                            VARE
E11    351               2  AU=BERTI, FURIO
E12    351               1  AU=BERTI, FURIO, TORINO, IT

          Enter P or PAGE for more
? s e2 or e3

155: MEDLINE(R)_1950-2011/Apr 15
              0  AU=BERTI, FRANCESCO
              0  AU=BERTI, FRANCESCA
              0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

347: JAPIO_Dec 1976-2010/Dec(Updated 110323)
              0  AU=BERTI, FRANCESCO
              0  AU=BERTI, FRANCESCA
              0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

144: Pascal_1973-2011/Apr W2
              0  AU=BERTI, FRANCESCO
              0  AU=BERTI, FRANCESCA
              0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

 35: Dissertation Abs Online_1861-2011/Mar
              0  AU=BERTI, FRANCESCO
              0  AU=BERTI, FRANCESCA
              0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

  5: Biosis Previews(R)_1926-2011/Apr W2
              0  AU=BERTI, FRANCESCO
              0  AU=BERTI, FRANCESCA
              0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

 74: Int.Pharm.Abs_1970-2011/Apr B2
              0  AU=BERTI, FRANCESCO
              0  AU=BERTI, FRANCESCA
              0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'
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 71: ELSEVIER BIOBASE_1994-2011/Apr W3
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               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

357: Derwent Biotech Res.__1982-2011/Nov W4
               0  AU=BERTI, FRANCESCO
               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

  6: NTIS_1964-2011/Apr W4
               0  AU=BERTI, FRANCESCO
               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

351: Derwent WPI_1963-2011/UD=201125
               0  AU=BERTI, FRANCESCA
              12  AU=BERTI, FRANCESCO
              12  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

 24: CSA Life Sciences Abstracts_1966-2011/Mar
               1  AU=BERTI, FRANCESCA
               6  AU=BERTI, FRANCESCO
               7  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

136: BioEngineering Abstracts_1966-2007/Jan
               0  AU=BERTI, FRANCESCO
               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

399: CA SEARCH(R)_1967-2010/UD=15417
               3  AU=BERTI, FRANCESCA
              36  AU=BERTI, FRANCESCO
              39  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

315: ChemEng & Biotec Abs_1970-2011/May
               0  AU=BERTI, FRANCESCO
               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

 73: EMBASE_1974-2011/Apr 19
               0  AU=BERTI, FRANCESCO
               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

 34: SciSearch(R) Cited Ref Sci_1990-2011/Apr W2
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               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

434: SciSearch(R) Cited Ref Sci_1974-1989/Dec
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               0  AU=BERTI, FRANCESCA
               0  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'

TOTAL: FILES 155,347,144 and ...
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              54  AU=BERTI, FRANCESCO
      S6      58  AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'
? ds

Set   File    Items   Description
```

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	347	1	
	144	24	
	35	0	
	5	38	
	74	5	
	71	30	
	357	10	
	6	0	
	351	48	
	24	29	
	136	0	
	399	6	
	315	0	
	73	77	
	34	64	
	434	0	
S1		404	W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA) AND CONJUGATE
	155	72	
	347	1	
	144	3	
	35	0	
	5	10	
	74	1	
	71	1	
	357	10	
	6	0	
	351	48	
	24	2	
	136	0	
	399	1	
	315	0	
	73	6	
	34	22	
	434	0	
S2		177	RD S1 (unique items)
	155	20	
	347	0	
	144	0	
	35	0	
	5	3	
	74	0	
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E3  -------           108 *AU=COSTANTINO, PAOLO
E4     399              2  AU=COSTANTINO, PAOLO A.
E5     351              2  AU=COSTANTINO,   PAOLO,   CHIRON  S.P.A.,  VIA
                           FIORENTI
E6     351              2  AU=COSTANTINO,   PAOLO,   CHIRON  S.R.L.,  VIA
                           FIORENTI
E7     351              1  AU=COSTANTINO, PAOLO, CHIRON SRL
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E12    351              1  AU=COSTANTINO, PAOLO, NOVARTIS VACCINES, AND
                           DIAG
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155: MEDLINE(R)_1950-2011/Apr 15
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 35: Dissertation Abs Online_1861-2011/Mar
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 71: ELSEVIER BIOBASE_1994-2011/Apr W3
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357: Derwent Biotech Res.__1982-2011/Nov W4
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351: Derwent WPI_1963-2011/UD=201125
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 24: CSA Life Sciences Abstracts_1966-2011/Mar
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136: BioEngineering Abstracts_1966-2007/Jan
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347: JAPIO_Dec 1976-2010/Dec(Updated 110323)
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144: Pascal_1973-2011/Apr W2
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                0  S6 OR S7

 35: Dissertation Abs Online_1861-2011/Mar
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             0  S6 OR S7

 74: Int.Pharm.Abs_1970-2011/Apr B2
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             0  S6 OR S7

 71: ELSEVIER BIOBASE_1994-2011/Apr W3
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357: Derwent Biotech Res.__1982-2011/Nov W4
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351: Derwent WPI_1963-2011/UD=201125
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 24: CSA Life Sciences Abstracts_1966-2011/Mar
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136: BioEngineering Abstracts_1966-2007/Jan
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399: CA SEARCH(R)_1967-2010/UD=15417
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315: ChemEng & Biotec Abs_1970-2011/May
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 73: EMBASE_1974-2011/Apr 19
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 34: SciSearch(R) Cited Ref Sci_1990-2011/Apr W2
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434: SciSearch(R) Cited Ref Sci_1974-1989/Dec
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 74: Int.Pharm.Abs_1970-2011/Apr B2
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357: Derwent Biotech Res.__1982-2011/Nov W4
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136: BioEngineering Abstracts_1966-2007/Jan
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399: CA SEARCH(R)_1967-2010/UD=15417
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>>>Duplicate detection is not supported for File 347.

>>>Duplicate detection is not supported for File 351.

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 10/7/1     (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI
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0021027583
WPI ACC NO: 2010-M58148/201066
Immunogenic composition for raising an immune response in a mammal comprises meningococcal lipooligosaccharide (LOS) and a pneumococcal serotype 14 ****capsular**** saccharide (CS14)
Patent Assignee: NOVARTIS AG (NOVS)
Inventor: COSTANTINO P
Patent Family (2 patents, 113 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2010109325	A2	20100930	WO 2010IB735	A	20100324	201066	B
WO 2010109325	A3	20110120	WO 2010IB735	A	20100324	201107	E

Priority Applications (no., kind, date): US 2009162996 P 20090324

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2010109325	A2	EN	47	4	

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

WO 2010109325 A3 EN

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Alerting Abstract WO A2

NOVELTY - Immunogenic composition comprises a meningococcal lipooligosaccharide (LOS) and a pneumococcal serotype 14 ****capsular**** saccharide (CS14), where the LOS and/or the CS14 do(es) not include a Gal-beta1-4 N-acetylglucosamine (GlcNAc)-beta1-3Gal-beta1-4Glc tetrasaccharide.

DESCRIPTION - INDEPENDENT CLAIMS are:

1.an unadjuvanted immunogenic composition comprising LOS and a CS14, where the LOS and the CS14 both include a Gal-beta1-4GlcNAc-beta1-3Gal-beta1-4Glc tetrasaccharide; and

2.a method for raising an immune response in a mammal comprising administering a composition to the mammal.

ACTIVITY - Immunostimulant; Antibacterial; Neuroprotective; Immunosuppressive. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The immunogenic composition is useful for raising an immune response in a mammal (claimed) and for treating and preventing diseases caused by ~****Neisseria**** meningitides ~ and/or ~Streptococcus pneumoniae ~ e.g. bacterial (or, more specifically, meningococcal and/or meningitis, or septicemia).

ADVANTAGE - The composition provides improved combination vaccines for protecting against both meningococcus serogroup B and pneumococcus.

Technology Focus

BIOTECHNOLOGY - Preferred Composition: In the composition, the

tetrasaccharide is present in CS14. It comprises an adjuvant. The LOS is prepared from a meningococcal strain lacking LgtB enzyme activity. The LOS is prepared from a meningococcal strain lacking GalE enzyme activity. The LOS is prepared from a meningococcal strain lacking LgtA and/or LgtE enzyme activity. The LOS lacks the terminal galactose of the Gal-beta1-4GlcNAc-beta1-3Gal-beta1-4Glc tetrasaccharide. The LOS is present within meningococcal outer membrane vesicles. The LOS is conjugated to proteins in the vesicles. The vesicles are prepared from a meningococcus that over-expresses TbpA. The LOS is conjugated to a carrier protein. The conjugation may be via a lipid A portion in the LOS or by a 3-deoxy-d-manno-octulosonic acid (KDO) residue. Alternatively, the immunogenic composition comprises one or more meningococcal polypeptide(s) and a CS14, where (a) the CS14 includes a Gal-beta1-4GlcNAc1-3Gal-beta1-4Glc tetrasaccharide, (b) the meningococcal polypeptide can elicit an immune response that is effective against serogroup B meningococcus, and (c) the composition does not include a meningococcal lipooligosaccharide. The meningococcal polypeptide(s) comprise a factor H binding protein (fHBP). The fHBP comprises an amino acid sequence having at least 85% sequence identity to SEQ ID NO. 1 (not defined) and/or comprising an amino acid sequence consisting of a fragment of at least 7 contiguous amino acids from SEQ ID NO. 1. The fHBP comprises an amino acid sequence having at least 85% sequence identity to SEQ ID NO. 2 (not defined) and/or comprising an amino acid sequence consisting of a fragment of at least 7 contiguous amino acids from SEQ ID NO. 2. The fHBP comprises an amino acid sequence having at least 85% sequence identity to SEQ ID NO. 3 (not defined) and/or comprising an amino acid sequence consisting of a fragment of at least 7 contiguous amino acids from SEQ ID NO. 3. The fHBP is lipidated. The fHBP elicits antibodies which can bind to a meningococcal polypeptide consisting of amino acid sequence SEQ ID NO. 1, 2 or 3. It also comprises a LOS and a CS14, where (a) the LOS and the CS14 both include a Gal-beta1-4GlcNAc-beta1-3Gal-beta1-4Glc tetrasaccharide, (b) the concentration of LOS is less than mu g/ml, and (c) the concentration of CS14 is less than 5 mu g/ml. The CS14 is conjugated to a carrier protein. The carrier protein is CRM197, tetanus toxoid, diphtheria toxoid or ~Haemophilus influenzae ~ protein D. It also comprises a LOS and a pneumococcal polypeptide antigen, where (a) the LOS includes a Gal-beta1-4GlcNAc-beta1-3Gal-beta1-4Glc tetrasaccharide, (b) the pneumococcal polypeptide can elicit an immune response that is effective against serotype 14 pneumococcus, and (c) the composition does not include a CS14. It comprises an aluminum salt adjuvant. The aluminum salt is an aluminum phosphate.

Title Terms/Index Terms/Additional Words: IMMUNOGENIC; COMPOSITION; RAISE; IMMUNE; RESPOND; MAMMAL; COMPRISE; MENINGOCOCCUS; PNEUMOCOCCUS; SEROLOGICAL; CAPSULE; SACCHARIDE

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
A61K-0039/02 A I F B 20060101
A61K-0039/09 A I L B 20060101
A61K-0039/095 A I L B 20060101
A61K-0039/295 A I L B 20060101
C07K-0014/315 A I L B 20060101
A61K-0039/02 C I B 20060101
ECLA: A61K-039/095, C07K-014/315B

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B04-C02F; B04-E99; B04-N03; B05-B02A3; B14-A01A5; B14-A01B2; B14-C03; B14-G01; B14-N16; B14-S06; B14-S11B1; D05-H07

Original Publication Data by Authority

WIPO
Publication No. WO 2010109325 A2 (Update 201066 B)
Publication Date: 20100930
**COMBINATIONS INCLUDING PNEUMOCOCCAL SEROTYPE 14 SACCHARIDE
COMBINAISONS COMPRENANT UN SACCHARIDE DE PNEUMOCOQUE SEROTYPE 14**
Assignee: ~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basel, CH
Residence: CH Nationality: CH (NOVS)
~(only US)~ COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, One Southampton Row, London WC1B 5HA, GB
Language: EN (47 pages, 4 drawings)
Application: WO 2010IB735 A 20100324 (Local application)
Priority: US 2009162996 P 20090324
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
Original IPC: A61K-39/02(B,I,H,EP,20060101,A,F)
A61K-39/02(B,I,M,98,20060101,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,A,F)
A61K-39/02(B,I,M,98,20060101,C)
Current ECLA class: A61K-39/095 C07K-14/315B
Original Abstract: Meningococcal lipooligosaccharide and pneumococcal serotype 14 capsular saccharide share an antigen that can cross-react with human tissue. The invention provides various ways of minimising the production of autoreactive antibodies when these two antigens are co-administered.
Le lipo-oligo-saccharide de meningocoque et le saccharide capsulaire de pneumocoque serotype 14 partagent un antigene qui peut presenter une reaction croisee avec un tissu humain. L'invention concerne divers moyens de reduire la production d'anticorps autoreactifs lorsque ces deux antigenes sont co-administres.

Publication No. WO 2010109325 A3 (Update 201107 E)
Publication Date: 20110120
COMBINATIONS INCLUDING PNEUMOCOCCAL SEROTYPE 14 SACCHARIDE
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: COSTANTINO P, IT
Language: EN
Application: WO 2010IB735 A 20100324 (Local application)
Priority: US 2009162996 P 20090324
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
Original IPC: A61K-39/02(B,I,H,EP,20060101,A,F)
A61K-39/09(B,I,H,EP,20060101,A,L) A61K-39/095(B,I,H,EP,20060101,A,L) A61K-39/295(B,I,H,EP,20060101,A,L) C07K-14/315(B,I,H,EP,20060101,A,L)
Current IPC: A61K-39/02(B,I,H,EP,20060101,A,F)
A61K-39/09(B,I,H,EP,20060101,A,L) A61K-39/095(B,I,H,EP,20060101,A,L) A61K-39/295(B,I,H,EP,20060101,A,L) C07K-14/315(B,I,H,EP,20060101,A,L)

Original Abstract: Meningococcal lipooligosaccharide and pneumococcal serotype 14 capsular saccharide share an antigen that can cross-react with human tissue. The invention provides various ways of minimising the production of autoreactive antibodies when these two antigens are co-administered.

10/7/2 (Item 2 from file: 351)
DIALOG(R)File 351:Derwent WPI

0020394151
WPI ACC NO: 2010-E89462/201032
Purification of Streptococcus pyogenes carbohydrate useful for the preparation of vaccines involves use of anionic exchange chromatography
Patent Assignee: NOVARTIS AG (NOVS)
Inventor: BERTI F; COSTANTINO P; KABANOVA A; ROMANO M R
Patent Family (1 patents, 124 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 2010049806	A1	20100506	WO 2009IB7346	A	20091027	201032 B

Priority Applications (no., kind, date): US 2008108763 P 20081027

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2010049806	A1	EN	56	15	

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

Alerting Abstract WO A1

NOVELTY - Purification (m1) of ~Streptococcus pyogenes ~ (group A ~Streptococcus ~ (GAS)) carbohydrate involves use of anionic exchange chromatography.

ACTIVITY - None given.

MECHANISM OF ACTION - Vaccines. Test details are described, but no results given.

USE - For purifying ~Streptococcus pyogenes ~ carbohydrate (claimed) which are used in the preparation of vaccines, and as an antigen for in vitro diagnostic assays in e.g. immunization.

ADVANTAGE - The anionic exchange chromatography provides a good yield (i.e. greater than 70, preferably greater than 75, greater than 80, greater than 85, and greater than 90%) of GAS carbohydrate; and particularly pure GAS carbohydrate preparation. The GAS carbohydrate is often contaminated with hyaluronic acid, which is derived from the GAS ****capsular**** ****polysaccharide****, thus anionic exchange chromatography is particularly effective at reducing hyaluronic acid contamination of GAS carbohydrate. This is particularly advantageous when the GAS carbohydrate is intended for use in a vaccine because hyaluronic acid is known to be immunogenic in its own right and induces antibodies that are cross-reactive with human tissue, so its presence in pharmaceutical products is detrimental to health. Anionic exchange chromatography is also particularly effective at reducing protein and nucleic acid contamination of GAS carbohydrate. The purification of GAS carbohydrate is performed under conditions that allow flow through of the saccharide during anionic

exchange chromatography, where impurities bind to the anion exchange matrix while GAS carbohydrate flows straight through the system into the eluant. The use of these conditions simplifies the purification process, as there is no need to use a mobile phase buffer of increasing ionic strength or increasing pH to elute the GAS carbohydrate from the matrix. The method provides a composition comprising a level of hyaluronic acid contamination that is less than 200 (preferably less than 150, more preferably less than 80, most preferably less than 40, especially 20, and particularly less than 10) ng/ml or less than 1 wt.% of hyaluronic acid relative to the weight of GAS carbohydrate; a level of polyrhamnose contamination that is less than 20 wt.% of polyrhamnose relative to the weight of GAS carbohydrate; a level of protein contamination that is around 2 wt.% of protein relative to the weight of GAS carbohydrate; and a level of nucleic acid contamination that is less than 1 wt.% of nucleic acid relative to the weight of GAS carbohydrate.

Technology Focus

ORGANIC CHEMISTRY - Preferred Method: The suspension is prepared by treating ~S. pyogenes ~ such that the GAS carbohydrate is released. The GAS carbohydrate is released by reductive acid treatment. The method involves filtration step(s) prior to the anionic exchange chromatography step. The filtration is by orthogonal filtration using 0.65 mu m filter. The method involves at least one ultrafiltration step prior to the anionic exchange chromatography step. The ultrafiltration is by tangential flow filtration using 30 kDa cut-off membrane. The anionic exchange chromatography step is carried out using a Q-resin as anionic exchange matrix. The anionic exchange chromatography step is carried out using anionic exchange matrix resin (1 ml) for every 1 mg of GAS carbohydrate. The anionic exchange chromatography step is performed under conditions that allow flow through of the GAS carbohydrate. The mobile phase buffer for the anionic exchange chromatography comprises alcohol (preferably ethanol) in an amount of 15-25%. The method involves at least one gel filtration step after the anionic exchange chromatography step. The gel filtration step(s) are carried out using a dextran gel as gel filtration matrix (1 ml for every 0.2 mg of GAS carbohydrate); and are performed using the same mobile phase buffer as the anionic exchange chromatography step. The method involves concentrating the GAS carbohydrate after the anionic exchange chromatography step. The concentration step(s) are carried out by tangential flow filtration using a 5 or 10 kDa cut-off membrane. The method involves conjugating the purified GAS carbohydrate to a carrier molecule.

POLYMERS - Preferred Components: The purified GAS carbohydrate has a molecular weight of 10 kDa. The saccharide is partially or fully de-N-acetylated. The starting material is an aqueous suspension of the GAS carbohydrate, further comprising hyaluronic acid and/or polyrhamnose.

Title Terms/Index Terms/Additional Words: PURIFICATION; STREPTOCOCCUS; PYOGENES; CARBOHYDRATE; USEFUL; PREPARATION; VACCINE; ANION; EXCHANGE; CHROMATOGRAPHY

Class Codes
International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
A61K-0039/09	A	I	L	B 20060101
B01D-0015/36	A	I	F	B 20060101
B01D-0061/14	A	I	L	B 20060101
C07K-0001/18	A	I	L	B 20060101
C07K-0001/34	A	I	L	B 20060101
C12P-0019/00	A	I	L	B 20060101
A61K-0039/09	C	I	L	B 20100101
B01D-0015/26	C	I	F	B 20100101
B01D-0061/14	C	I	L	B 20100101
C07K-0001/00	C	I	L	B 20100101

C12P-0019/00 C I L B 20100101
ECLA: A61K-039/09A
ICO: K61K-039:555A, K61K-039:60P10, L01D-061:14D

File Segment: CPI; EPI
DWPI Class: B04; D16; J01; S03
Manual Codes (EPI/S-X): S03-E09C5
Manual Codes (CPI/A-M): B04-C02F; B11-B03; B12-K04A; B14-S11; D05-H13; J01-C; J01-D01A; J01-D04; J01-D07

Original Publication Data by Authority

WIPO
Publication No. WO 2010049806 A1 (Update 201032 B)
Publication Date: 20100506
**PURIFICATION METHOD
PROCEDE DE PURIFICATION**
Assignee: ~(except US)~ NOVARTIS AG, Lichstrasse 35, CH-4056 Basel, CH Residence: CH Nationality: CH (NOVS)
~(only US)~ COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BERTI, Francesco, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ KABANOVA, Anna, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: RU
~(only US)~ ROMANO, Maria, Rosaria, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BERTI, Francesco, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
KABANOVA, Anna, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: RU
ROMANO, Maria, Rosaria, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, 43-45 Bloomsbury Square, London, WC1A 2RA, GB
Language: EN (56 pages, 15 drawings)
Application: WO 2009IB7346 A 20091027 (Local application)
Priority: US 2008108763 P 20081027
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-39/09(B,I,H,EP,20060101,A,L)
A61K-39/09(B,I,M,98,20060101,C) B01D-15/26(B,I,M,98,20060101,C)
B01D-15/36(B,I,H,EP,20060101,A,F) B01D-61/14(B,I,H,EP,20060101,A,L)
B01D-61/14(B,I,M,98,20060101,C) C07K-1/00(B,I,M,98,20060101,C)
C07K-1/18(B,I,H,EP,20060101,A,L) C07K-1/34(B,I,H,EP,20060101,A,L)
C12P-19/00(B,I,H,EP,20060101,A,L) C12P-19/00(B,I,M,98,20060101,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20100506,A,L)
A61K-39/09(B,I,H,EP,20100101,20100506,C,L)
B01D-15/26(B,I,H,EP,20100101,20100506,C,F)
B01D-15/36(B,I,H,EP,20060101,20100506,A,F)
B01D-61/14(B,I,H,EP,20060101,20100506,A,L)

B01D-61/14(B,I,H,EP,20100101,20100506,C,L)
C07K-1/00(B,I,H,EP,20100101,20100506,C,L)
C07K-1/18(B,I,H,EP,20060101,20100506,A,L)
C07K-1/34(B,I,H,EP,20060101,20100506,A,L)
C12P-19/00(B,I,H,EP,20060101,20100506,A,L)
C12P-19/00(B,I,H,EP,20100101,20100506,C,L)
Current ECLA class: A61K-39/09A
Current ECLA ICO class: K61K-39:555A K61K-39:60P10 L01D-61:14D
Original Abstract: A process for purifying a Streptococcus pyogenes GAS carbohydrate comprising a step of anionic exchange chromatography. The process provides a good yield of GAS carbohydrate. The saccharides of the invention have low levels of hyaluronic acid, protein and nucleic acid contamination.
La presente invention concerne un procede permettant la purification du glucide Streptococcus pyogenes (GAS), comprenant une etape de chromatographie par echange anionique. Le procede permet d'obtenir un bon rendement de glucide GAS. Les saccharides selon l'invention presentent de faibles niveaux de contamination par l'acide hyaluronique, par des proteines et par l'acide nucleique.

10/7/3 (Item 3 from file: 351)
DIALOG(R)File 351:Derwent WPI

0019961320 - Drawing available
WPI ACC NO: 2009-S40218/201008
Production of conjugate of ****capsular**** saccharide of Salmonella typhi e.g. for raising immune response, by combining linker, carbodiimide and carrier protein, removing excess linker, and reacting with product of saccharide with carbodiimide
Patent Assignee: NOVARTIS AG (NOVS)
Inventor: BERTI F; COSTANTINO P; MICOLI F
Patent Family (5 patents, 125 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2009150543	A2	20091217	WO 2009IB6285	A	20090612	201008	B
WO 2009150543	A3	20100506	WO 2009IB6285	A	20090612	201030	E
AU 2009259017	A1	20091217	AU 2009259017	A	20090612	201109	E
CA 2727565	A1	20091217	CA 2727565	A	20090612	201120	E
			WO 2009IB6285	A	20090612		
			CA 2727565	A	20101210		
EP 2303333	A2	20110406	EP 2009762071	A	20090612	201124	E
			WO 2009IB6285	A	20090612		

Priority Applications (no., kind, date): GB 200810894 A 20080613

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2009150543	A2	EN	42	18	

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
WO 2009150543 A3 EN
National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD

GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS
LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT
RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC
VN ZA ZM ZW
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW
GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
AU 2009259017 A1 EN Based on OPI patent WO 2009150543
CA 2727565 A1 EN PCT Application WO 2009IB6285
PCT national entry CA 2727565
Based on OPI patent WO 2009150543
EP 2303333 A2 EN PCT Application WO 2009IB6285
Based on OPI patent WO 2009150543
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR AL
BA RS

Alerting Abstract WO A2

NOVELTY - Production of conjugate of ****capsular**** saccharide of ~Salmonella typhi ~ (Vi) comprises simultaneously combining a linker, carbodiimide and carrier protein; removing any excess linker from the product of first step; reacting Vi with carbodiimide; and reacting the product of second step with the product of third step.

DESCRIPTION - INDEPENDENT CLAIMS are included for:

1.a conjugate comprising Vi linked to cross reacting material 197 (CRM197);

2.a pharmaceutical composition comprising the conjugate in combination with a carrier; and

3.a method for derivatizing a Vi saccharide comprising reacting the saccharide with a carbodiimide at Vi:carbodiimide molar ratio of greater than 3:1.

ACTIVITY - Immunostimulant; Antipyretic; Antibacterial.

MECHANISM OF ACTION - Vaccine.

USE - The method is for production of conjugate of Vi for raising an immune response in a mammal (claimed) or for use in medicine for raising an antibody response in a mammal, and for manufacture of medicament for preventing or treating typhoid fever in a mammal. The mammal is preferably a human. Balb/c female mice were divided in 14 groups of eight mice each and were subcutaneously immunized with 2.5 mu g of Vi, Vi-conjugate or physical mixture of Vi and ADH-derivatized carrier protein. Only groups 13 and 14 received 10 mu g of immunization dose. Three injections of 200 mu l each were given every two weeks, with bleedings two weeks after each immunization. Groups 9-12 received alum as adjuvant, while the adjuvant for groups 13 and 14 was complete Freund's adjuvant (first injection) and incomplete Freund's adjuvant (second and third injections). An anti-Vi antibody values for groups 1-14 were respectively (T14;T28;T42): (3.3;-1.03;- 1.54), (- 3.4;- 1.94;- 0.04), (5.0;- 0.14;0.03), (1.1;2.51;1.31), (53.7;242.20;191.53), (95.4;245.39;225.66), (75.5;170.20;160.49), (58.2;126.23;126.20), (56.4;162.52;98.58), (58.7;98.92;93.22), (44.6;191.81;151.56), (68.1;202.99;180.09), (65.3;271.48;264.39), and (134.5;202.51;234.78).

DESCRIPTION OF DRAWINGS - The drawing shows a graph of size-exclusion chromatography analysis of Vi-TT(ADH).

Technology Focus

BIOTECHNOLOGY - Preferred Component: The carrier protein is CRM197 or tetanus toxoid (TT).

INORGANIC CHEMISTRY - Preferred Component: The composition comprises

saline and optionally adjuvant.
ORGANIC CHEMISTRY - Preferred Component: The carbodiimide is 1-ethyl-3(3-dimethylaminopropyl)carbodiimide. The Vi:carbodiimide molar ratio is greater than 5:1 (preferably greater than 9:1). Preferred Process: The excess linker is removed by dialysis. The Vi is linked to CRM197 by an adipic acid dihydrazide (ADH) as linker.

Title Terms/Index Terms/Additional Words: PRODUCE; CONJUGATE; CAPSULE; SACCHARIDE; SALMONELLA; TYPHI; RAISE; IMMUNE; RESPOND; COMBINATION; LINK; CARBODIIMIDE; CARRY; PROTEIN; REMOVE; EXCESS; REACT; PRODUCT

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
A61K-0047/48 A I F B 20060101
A61P-0043/00 A N L B 20060101
A61P-0043/00 A I L B 20060101
A61K-0047/48 C I B 20060101
A61K-0047/48 C I F B 20100101
A61P-0043/00 C N B 20060101
A61P-0043/00 C N L B 20100101
ECLA: A61K-047/48R2D

File Segment: CPI
DWPI Class: B04; B07
Manual Codes (CPI/A-M): B04-C02F; B04-N03; B11-A01A; B14-A01A8; B14-C04; B14-G01; B14-S11B1

Original Publication Data by Authority

Australia
Publication No. AU 2009259017 A1 (Update 201109 E)
Publication Date: 20091217
Assignee: NOVARTIS AG (NOVS)
Inventor: COSTANTINO P
MICOLI F
BERTI F
Language: EN
Application: AU 2009259017 A 20090612 (Local application)
Priority: GB 200810894 A 20080613
Related Publication: WO 2009150543 A (Based on OPI patent)
Original IPC: A61K-47/48(B,I,H,EP,20060101,20091217,A,F)
A61P-43/00(B,N,H,EP,20060101,20091217,A,L)
Current IPC: A61K-47/48(B,I,H,EP,20060101,20091217,A,F)
A61P-43/00(B,N,H,EP,20060101,20091217,A,L)
Current ECLA class: A61K-47/48R2D

Canada
Publication No. CA 2727565 A1 (Update 201120 E)
Publication Date: 20091217
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: MICOLI F, IT
COSTANTINO P, IT
BERTI F, IT
Language: EN
Application: CA 2727565 A 20090612 (Local application)
WO 2009IB6285 A 20090612 (PCT Application)
CA 2727565 A 20101210 (PCT national entry)
Priority: GB 200810894 A 20080613
Related Publication: WO 2009150543 A (Based on OPI patent)

Original IPC: A61K-47/48(B,I,H,EP,20060101,20110129,A,F)
A61P-43/00(B,N,H,EP,20060101,20110129,A,L)
Current IPC: A61K-47/48(B,I,H,EP,20060101,20110129,A,F)
A61P-43/00(B,N,H,EP,20060101,20110129,A,L)

EPO
Publication No. EP 2303333 A2 (Update 201124 E)
Publication Date: 20110406
CONJUGATED VI SACCHARIDES
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: MICOLI F, IT
COSTANTINO P, IT
BERTI F, IT
Language: EN
Application: EP 2009762071 A 20090612 (Local application)
WO 2009IB6285 A 20090612 (PCT Application)
Priority: GB 200810894 A 20080613
Related Publication: WO 2009150543 A (Based on OPI patent)
Designated States: (Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR AL BA RS
Original IPC: A61K-47/48(B,I,H,EP,20060101,20100106,A,F)
A61P-43/00(B,I,H,EP,20060101,20100106,A,L)
Current IPC: A61K-47/48(B,I,H,EP,20060101,20100106,A,F)
A61P-43/00(B,I,H,EP,20060101,20100106,A,L)

WIPO
Publication No. WO 2009150543 A2 (Update 201008 B)
Publication Date: 20091217
**CONJUGATED VI SACCHARIDES
CONJUGUES VI DE SACCHARIDES**
Assignee: ~(except US)~ NOVARTIS AG, Lichstrasse 35, CH-4056 Basel, CH
Residence: CH Nationality: CH (NOVS)
~(only US)~ MICOLI, Francesca, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
MICOLI, Francesca, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (42 pages, 18 drawings)
Application: WO 2009IB6285 A 20090612 (Local application)
Priority: GB 200810894 A 20080613
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-47/48(B,I,H,EP,20060101,A,F)
A61K-47/48(B,I,M,98,20060101,C) A61P-43/00(B,N,H,EP,20060101,A,L)
A61P-43/00(B,N,M,98,20060101,C)

Current IPC: A61K-47/48(B,I,H,EP,20060101,A,F)
A61K-47/48(B,I,M,98,20060101,C) A61P-43/00(B,N,H,EP,20060101,A,L)
A61P-43/00(B,N,M,98,20060101,C)
Current ECLA class: A61K-47/48R2D
Original Abstract: Two Vi conjugates have been prepared by carbodiimide-mediated synthesis, using adipic acid dihydrazide derivatized CRM197 (a non-toxic variant of diphtheria toxin) and tetanus toxoid, as carrier proteins.
Deux conjugues Vi ont ete prepares par une synthese induite par les carbodiimides, utilisant la CRM197 derivatisee de dihydrazide d'acide adipique (un variant non toxique de la toxine de diphterie) et le toxoide du tetanos, comme proteines-supports.

Publication No. WO 2009150543 A3 (Update 201030 E)
Publication Date: 20100506
CONJUGATED VI SACCHARIDES
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BERTI F, IT
COSTANTINO P, IT
MICOLI F, IT
Language: EN
Application: WO 2009IB6285 A 20090612 (Local application)
Priority: GB 200810894 A 20080613
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-47/48(B,I,H,EP,20060101,A,F)
A61K-47/48(B,I,M,98,20060101,C) A61P-43/00(B,N,H,EP,20060101,A,L)
A61P-43/00(B,N,M,98,20060101,C)
Current IPC: A61K-47/48(B,I,H,EP,20060101,20100506,A,F)
A61K-47/48(B,I,H,EP,20100101,20100506,C,F)
A61P-43/00(B,N,H,EP,20060101,20100506,A,L)
A61P-43/00(B,N,H,EP,20100101,20100506,C,L)
Current ECLA class: A61K-47/48R2D
Original Abstract: Two Vi conjugates have been prepared by carbodiimide-mediated synthesis, using adipic acid dihydrazide derivatized CRM197 (a non-toxic variant of diphtheria toxin) and tetanus toxoid, as carrier proteins.

10/7/4 (Item 4 from file: 351)
DIALOG(R)File 351:Derwent WPI

0019961318 - Drawing available
WPI ACC NO: 2009-S40212/201008
Quantification of ****capsular**** saccharide of Salmonella typhi present in sample, comprises de-O-acetylating any ****capsular**** saccharide of Salmonella typhi present in sample, and obtaining nuclear magnetic resonance spectrum of sample
Patent Assignee: NOVARTIS AG (NOVS)
Inventor: BERTI F; MICOLI F; PROIETTI D
Patent Family (6 patents, 125 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 2009150533	A2	20091217	WO 2009IB6087	A	20090612	201008 B

WO 2009150533	A3	20100204	WO 2009IB6087	A	20090612	201010	E
AU 2009259007	A1	20091217	AU 2009259007	A	20090612	201111	E
CA 2727563	A1	20091217	CA 2727563	A	20090612	201120	E
			WO 2009IB6087	A	20090612		
			CA 2727563	A	20101210		
IN 201004854	P2	20110311	WO 2009IB6087	A	20090612	201123	E
			IN 2010KN4854	A	20101220		
EP 2300817	A2	20110330	EP 2009762061	A	20090612	201124	E
			WO 2009IB6087	A	20090612		

Priority Applications (no., kind, date): IT 2008MI1079 A 20080613

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2009150533	A2	EN	23	13	

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

WO 2009150533 A3 EN

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

AU 2009259007	A1	EN	Based on OPI patent WO 2009150533
CA 2727563	A1	EN	PCT Application WO 2009IB6087 PCT national entry CA 2727563 Based on OPI patent WO 2009150533
IN 201004854	P2	EN	PCT Application WO 2009IB6087
EP 2300817	A2	EN	PCT Application WO 2009IB6087 Based on OPI patent WO 2009150533

Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR AL BA RS

Alerting Abstract WO A2

NOVELTY - Quantification of ****capsular**** saccharide of ~Salmonella typhi ~ (Vi) present in a sample comprises de-O-acetylating any Vi saccharide present in the sample, and obtaining a nuclear magnetic resonance (NMR) spectrum of the sample.

DESCRIPTION - An INDEPENDENT CLAIM is included for a method for quantifying Vi saccharide present in a sample by liquid chromatography.

USE - Quantification of Vi saccharide present in a sample (claimed).

ADVANTAGE - The two methods are simple and accurate for quantifying Vi saccharide and its conjugates that allow the detection of very low (<= 5 mu g/ml, including as low as 1 mu g/ml) Vi concentrations. The liquid chromatography is an improvement over conventional techniques, such as acridine orange method, as it permits the quantification of Vi in a sample containing proteins, reagents and other contaminants.

DESCRIPTION OF DRAWINGS - The drawing shows a graph of HPAEC-PAD analysis of Vi saccharide after de-O-acetylation and hydrolysis with 4 M TFA at 120 degrees Celsius for 2 hours.

Technology Focus
BIOTECHNOLOGY - Preferred Component: The Vi saccharide is from ~S. typhi ~ or ~Citrobacter freundii ~ .
INORGANIC CHEMISTRY - Preferred Component: The Vi saccharide is de-O-acetylated by sodium deuteroxide.
INSTRUMENTATION AND TESTING - Preferred Process: The method further comprises using NMR spectrum to calculate the amount of Vi saccharide present in the sample, and adding a known amount of reference compound to the sample. An N-acetyl resonance is used to calculate the amount of Vi saccharide present in the sample. The NMR spectroscopy is hydrogen-1 NMR spectroscopy. The liquid chromatography is high performance anion exchange chromatography (HPAEC), and the method uses pulsed amperometric detection (PAD) or (HPAEC-PAD). The method comprises hydrolyzing Vi saccharide present in the sample, de-acetylating Vi saccharide present in the sample, and analyzing the sample by liquid chromatography. The method further comprises a second hydrolysis step that follows the de-acetylation step. The hydrolysis step(s) is carried out by treatment with 4 M trifluoroacetic acid (TFA) at 120(deg) C for 2 hours. The de-acetylation step is carried out by treatment with 2 M sodium hydroxide at 110(deg) C for 6 hours. Hydrolysis and de-acetylation involves treatment with sodium hydroxide at 100-150(deg) C for 2-6 hours.
ORGANIC CHEMISTRY - Preferred Component: The reference compound is citric acid or ethanol.

Title Terms/Index Terms/Additional Words: QUANTIFICATION; CAPSULE; SACCHARIDE; SALMONELLA; TYPHI; PRESENT; SAMPLE; COMPRISE; DE; ACETYLATE; OBTAIN; NUCLEAR; MAGNETIC; RESONANCE; SPECTRUM

Class Codes
International Classification (Main): G01N-033/15
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G01N-0033/15 A I F B 20060101
ECLA: G01R-033/46
ICO: S01N-224:352, S01N-333:255, S01N-400:10, S01R-330:400A, S01R-330:404B

File Segment: CPI; EPI
DWPI Class: B04; J04; S03
Manual Codes (EPI/S-X): S03-E07C; S03-E14A1
Manual Codes (CPI/A-M): B04-C02F; B11-C08A; B11-C08D2; B12-K04; J04-B01A; J04-B01C; J04-C01; J04-C03

Original Publication Data by Authority

Australia
Publication No. AU 2009259007 A1 (Update 201111 E)
Publication Date: 20091217
Assignee: NOVARTIS AG (NOVS)
Inventor: MICOLI F
BERTI F
PROIETTI D
Language: EN
Application: AU 2009259007 A 20090612 (Local application)
Priority: IT 2008MI1079 A 20080613
Related Publication: WO 2009150533 A (Based on OPI patent)
Original IPC: G01N-33/15(B,I,H,EP,20060101,20100204,A,F)
Current IPC: G01N-33/15(B,I,H,EP,20060101,20100204,A,F)
Current ECLA class: G01R-33/46
Current ECLA ICO class: S01N-224:352 S01N-333:255 S01N-400:10 S01R-330:400A

Canada
Publication No. CA 2727563 A1 (Update 201120 E)
Publication Date: 20091217
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BERTI F, IT
MICOLI F, IT
PROIETTI D, IT
Language: EN
Application: CA 2727563 A 20090612 (Local application)
WO 2009IB6087 A 20090612 (PCT Application)
CA 2727563 A 20101210 (PCT national entry)
Priority: IT 2008MI1079 A 20080613
Related Publication: WO 2009150533 A (Based on OPI patent)
Original IPC: G01N-33/15(B,I,H,EP,20060101,20110129,A,F)
Current IPC: G01N-33/15(B,I,H,EP,20060101,20110129,A,F)

EPO
Publication No. EP 2300817 A2 (Update 201124 E)
Publication Date: 20110330
**ANALYSE VON VI-SACCHARIDEN
ANALYSIS OF VI SACCHARIDES
ANALYSE DE SACCHARIDES VI**
Assignee: Novartis AG, Lichtstrasse 35, 4056 Basel, CH (NOVS)
Inventor: BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
MICOLI, Francesca, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
PROIETTI, Daniela, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, One Southampton Row, London, WC1B 5HA, GB
Language: EN
Application: EP 2009762061 A 20090612 (Local application)
WO 2009IB6087 A 20090612 (PCT Application)
Priority: IT 2008MI1079 A 20080613
Related Publication: WO 2009150533 A (Based on OPI patent)
Designated States: (Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR AL BA RS
Original IPC: G01N-33/15(B,I,H,EP,20060101,20100107,A,F)
Current IPC: G01N-33/15(B,I,H,EP,20060101,20100107,A,F)
Original Abstract: ~Salmonella typhi Vi~ saccharide can be assayed in two new ways. First, its proton NMR spectrum can be used, with comparison to an internal Standard permitting quantitative analysis. Second, anion exchange chromatography with amperometric detection can be used on hydrolysed saccharide.

India
Publication No. IN 201004854 P2 (Update 201123 E)
Publication Date: 20110311
Analysis of saccharides
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BERTI F
MICOLI F
PROIETTI D
Language: EN
Application: IN 2010KN4854 A 20101220 (Local application)
WO 2009IB6087 A 20090612 (PCT Application)
Priority: IT 2008MI1079 A 20080613
Original IPC: G01N-33/15(A)
Current IPC: G01N-33/15(A)

WIPO
Publication No. WO 2009150533 A2 (Update 201008 B)
Publication Date: 20091217
**ANALYSIS OF VI SACCHARIDES
ANALYSE DE SACCHARIDES VI**
Assignee: ~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basel, CH
Residence: CH Nationality: CH (NOVS)
~(only US)~ BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ MICOLI, Francesca, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ PROIETTI, Daniela, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
MICOLI, Francesca, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
PROIETTI, Daniela, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (23 pages, 13 drawings)
Application: WO 2009IB6087 A 20090612 (Local application)
Priority: IT 2008MI1079 A 20080613
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: G01N-33/15(B,I,H,EP,20060101,A,F)
G01N-33/15(B,I,M,98,20060101,C)
Current IPC: G01N-33/15(B,I,H,EP,20060101,20091217,A,F)
Current ECLA class: G01R-33/46
Current ECLA ICO class: S01N-224:352 S01N-333:255 S01N-400:10 S01R-330:400A S01R-330:404B
Original Abstract: ~Salmonella typhi Vi~ saccharide can be assayed in two new ways. First, its proton NMR spectrum can be used, with comparison to an internal Standard permitting quantitative analysis. Second, anion exchange chromatography with amperometric detection can be used on hydrolysed saccharide.
Le saccharide VI de ~Salmonella typhi~ peut etre dose de deux nouvelles facons. Tout d'abord, son spectre de RMN du proton peut etre utilise, avec comparaison avec un etalon interne permettant une analyse quantitative. Ensuite, une chromatographie d'echange d'anions avec une detection amperometrique peut etre utilisee sur un saccharide hydrolyse.

Publication No. WO 2009150533 A3 (Update 201010 E)
Publication Date: 20100204
ANALYSIS OF VI SACCHARIDES
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BERTI F, IT
MICOLI F, IT
PROIETTI D, IT
Language: EN
Application: WO 2009IB6087 A 20090612 (Local application)
Priority: IT 2008MI1079 A 20080613
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH

BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

Original IPC: G01N-33/15(B,I,H,EP,20060101,A,F)
G01N-33/15(B,I,M,98,20060101,C)
Current IPC: G01N-33/15(B,I,H,EP,20060101,20100204,A,F)
Current ECLA class: G01R-33/46
Current ECLA ICO class: S01N-224:352 S01N-333:255 S01N-400:10 S01R-330:400A S01R-330:404B
Original Abstract: Salmonella typhi Vi saccharide can be assayed in two new ways. First, its proton NMR spectrum can be used, with comparison to an internal Standard permitting quantitative analysis. Second, anion exchange chromatography with amperometric detection can be used on hydrolysed saccharide.

10/7/5 (Item 5 from file: 351)
DIALOG(R)File 351:Derwent WPI

0019309140
WPI ACC NO: 2009-L52824/200950
Membrane, useful for adsorption and removal of ****lipopolysaccharide**** from a suspension, comprises a polymeric substrate that binds to ****lipopolysaccharide****, which is from e.g. proteobacteria, cyanobacteria and green sulfur bacteria
Patent Assignee: NOVARTIS AG (NOVS); BARBANI N (BARB-I); CIARDELLI G (CIAR-I); COSTANTINO P (COST-I)
Inventor: BARBANI N; CIARDELLI G; COSTANTINO P; BRABANT N, CH; COSTANTINO P, CH; SIADELY G, CH
Patent Family (7 patents, 123 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2009087571	A2	20090716	WO 2009IB133	A	20090107	200950	B
WO 2009087571	A3	20090903	WO 2009IB133	A	20090107	200958	E
EP 2244828	A2	20101103	EP 2009700597	A	20090107	201072	E
			WO 2009IB133	A	20090107		
US 20100282684	A1	20101111	WO 2009IB133	A	20090107	201074	E
			US 2010744306	A	20100716		
CN 101909742	A	20101208	CN 200980102069	A	20090107	201104	E
			WO 2009IB133	A	20090107		
CA 2711584	A1	20090716	CA 2711584	A	20090107	201110	E
			WO 2009IB133	A	20090107		
			CA 2711584	A	20100706		
JP 2011508772	W	20110317	WO 2009IB133	A	20090107	201121	E
			JP 2010541129	A	20090107		

Priority Applications (no., kind, date): GB 2008228 A 20080107

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2009087571	A2	EN	13	2	

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA

ZM ZW
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW
GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
WO 2009087571 A3 EN
National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH
BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE
GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT
LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS
RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA
ZM ZW
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW
GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
EP 2244828 A2 EN PCT Application WO 2009IB133
Based on OPI patent WO 2009087571
Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR AL
BA RS
US 20100282684 A1 EN PCT Application WO 2009IB133
CN 101909742 A ZH PCT Application WO 2009IB133
Based on OPI patent WO 2009087571
CA 2711584 A1 EN PCT Application WO 2009IB133
PCT national entry CA 2711584
Based on OPI patent WO 2009087571
JP 2011508772 W JA 15 PCT Application WO 2009IB133
Based on OPI patent WO 2009087571

Alerting Abstract WO A2

NOVELTY - Membrane comprises a polymeric substrate that binds ****lipopolysaccharide****.

DESCRIPTION - INDEPENDENT CLAIMS are included for:

1.a process for forming a polymeric substrate that binds to ****lipopolysaccharide****, comprising either contacting a homogeneous polymer solution and a template solution, carrying out a phase inversion of the resulting solution and removing the template, or contacting a monomer solution and a template solution, reacting crosslinking groups of the monomers to form a polymer and removing the template;

2.a method for the removal of ****lipopolysaccharide**** from a suspension comprising providing the polymeric substrate and contacting the suspension with the polymeric substrate; and

3.a polymeric substrate produced by the process.

USE - The membrane is useful for: adsorption of ****lipopolysaccharide****, where the ****lipopolysaccharide**** is from Gram-negative bacteria (which are proteobacteria, cyanobacteria, spirochetes, green sulfur bacteria, green non-sulfur bacteria, crenarchaeota, cocci, bacilli or nosocomial bacteria); and removing ****lipopolysaccharide**** from a suspension (all claimed).

ADVANTAGE - The membrane selectively removes ****lipopolysaccharide****, or endotoxin, during the purification of molecules of biopharmaceutical interest.

Technology Focus

PHARMACEUTICALS - Preferred Components: The suspension comprises water and a pharmaceutical ingredient. The pharmaceutical ingredient is a bacterial vaccine.

POLYMERS - Preferred Components: The polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid. Preferred

Components: The template solution comprises at least one of heptose and 2-keto-3-deoxyoctonic acid. The polymeric substrate is in the form of a membrane or discrete particles. The polymeric substrate comprises one or more polar groups, preferably one or more hydroxyl groups. The polymeric substrate comprises poly(ethylene-co-vinyl alcohol). The ratio of ethylene:co-vinyl alcohol in the poly(ethylene-co-vinyl alcohol) is 30-60:70-40. Preferred Process: The process further comprises the step of making a membrane. The polymeric substrate is attached to a solid state support.

Title Terms/Index Terms/Additional Words: MEMBRANE; USEFUL; ADSORB; REMOVE; SUSPENSION; COMPRISE; POLYMERISE; SUBSTRATE; BIND; CYANOBACTERIA; GREEN; SULPHUR; BACTERIA

Class Codes
International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
B01D-0015/04	A	I	F	B 20060101
B01D-0061/00	A	I	L	B 20060101
B01D-0067/00	A	I	L	B 20060101
B01J-0020/26	A	I	F	B 20060101
B01J-0020/28	A	I	L	B 20060101
C08F-0118/02	A	I	L	B 20060101
A61K-0039/00	A	I	L	B 20060101
A61K-0039/02	A	I	F	B 20060101
A61K-0039/07	A	I	L	B 20060101
A61K-0047/32	A	I	L	B 20060101
A61K-0009/10	A	I	L	B 20060101
B01D-0069/00	A	I	L	B 20060101
B01D-0071/38	A	I	L	B 20060101
B01D-0015/04	C	I		B 20060101
B01D-0061/00	C	I	L	B 20090101
B01D-0061/00	C	I		B 20060101
B01D-0067/00	C	I	L	B 20090101
B01D-0067/00	C	I		B 20060101
B01J-0020/22	C	I	F	B 20090101
B01J-0020/22	C	I		B 20060101
B01J-0020/28	C	I	L	B 20090101
B01J-0020/28	C	I		B 20060101
C08F-0118/00	C	I		B 20060101

ECLA: B01D-061/00, B01D-067/00K18D, B01J-020/26, B01J-020/28D24
ICO: L01D-323:24
US Classification, Current Main: 210-691000; Secondary: 210-690000, 526-319000
US Classification, Issued: 210691, 210690, 526319

JP Classification

FI Term	Facet	Rank	Type
A61K-039/00	D	B	secondary
A61K-039/02		A	main
A61K-039/07		B	secondary
A61K-047/32		B	secondary
A61K-009/10		B	secondary
B01D-069/00		B	secondary
B01D-071/38		B	secondary

F-Term Theme	View Point + Figure	Additional Code
4C076		
4C085		
4D006		
4C085	AA03	
4C076	AA22	

4C085 BA07
4C085 BA15
4C085 CC07
4C076 CC31
4C085 DD37
4C085 EE01
4C076 EE03
4C076 EE06
4C076 FF70
4D006 GA01
4C076 GG43
4D006 MC34
4D006 NA54
4D006 PA01
4D006 PB02
4D006 PB70
4D006 PC43

File Segment: CPI
DWPI Class: A18; A97; B04; J01; J04
Manual Codes (CPI/A-M): A03-A01; A10-E09B; A12-W11A; A12-W11L; B04-C02V; B04-C03; B14-S11B1; J01-C03; J04-X

Original Publication Data by Authority

Canada
Publication No. CA 2711584 A1 (Update 201110 E)
Publication Date: 20090716
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: COSTANTINO P, IT
CIARDELLI G, IT
BARBANI N, IT
Language: EN
Application: CA 2711584 A 20090107 (Local application)
WO 2009IB133 A 20090107 (PCT Application)
CA 2711584 A 20100706 (PCT national entry)
Priority: GB 2008228 A 20080107
Related Publication: WO 2009087571 A (Based on OPI patent)
Original IPC: B01D-61/00(B,I,H,EP,20060101,20100907,A,L)
B01D-67/00(B,I,H,EP,20060101,20100907,A,L)
B01J-20/26(B,I,H,EP,20060101,20100907,A,F)
B01J-20/28(B,I,H,EP,20060101,20100907,A,L)
Current IPC: B01D-61/00(B,I,H,EP,20060101,20100907,A,L)
B01D-67/00(B,I,H,EP,20060101,20100907,A,L)
B01J-20/26(B,I,H,EP,20060101,20100907,A,F)
B01J-20/28(B,I,H,EP,20060101,20100907,A,L)

China
Publication No. CN 101909742 A (Update 201104 E)
Publication Date: 20101208
Lipopolysaccharide decontamination
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: COSTANTINO P, CH
COSTANTINO PAOLO, CH
SIADELY G, CH
Siadely G, CH
BRABANT N, CH
BRABANT N, CH
Language: ZH
Application: CN 200980102069 A 20090107 (Local application)

WO 2009IB133 A 20090107 (PCT Application)
Priority: GB 2008228 A 20080107
Related Publication: WO 2009087571 A (Based on OPI patent)
Original IPC: B01D-61/00(I,CN,20060101,A,L) B01D-67/00(I,CN,20060101,A,L)
B01J-20/26(I,CN,20060101,A,F) B01J-20/28(I,CN,20060101,A,L)
Current IPC: B01D-61/00(B,I,H,CN,20060101,20101209,A,L)
B01D-67/00(B,I,H,CN,20060101,20101209,A,L)
B01J-20/26(B,I,H,CN,20060101,20101209,A,F)
B01J-20/28(B,I,H,CN,20060101,20101209,A,L)
Original Abstract: The invention claims materials and methods for the selective removal of lipopolysaccharide during the purification of molecules of biopharmaceutical interest, which are based on a polymeric substrate that binds lipopolysaccharide. Preferably, the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid. The substrate can be formed by a process comprising: (i) contacting a homogeneous polymer solution and a template solution; (ii) carrying out a phase inversion of the resulting solution; and (iii) removing the template.
Claim: [CLAIM 1] A membrane for adsorption of lipopolysaccharide, comprising a polymeric substrate that binds lipopolysaccharide.
[CLAIM 2] The membrane according to claim 1, wherein the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid.
[CLAIM 3] The membrane according to either of claims 1 and 2, wherein the lipopolysaccharide is from Gram-negative bacteria.
[CLAIM 4] The membrane according to claim 3, wherein the Gram-negative bacteria are proteobacteria, cyanobacteria, spirochaetes, green sulphur bacteria, green non-sulphur bacteria, crenarchaeota, cocci, bacilli or nosocomial bacteria.
[CLAIM 5] A process for forming a polymeric substrate that binds lipopolysaccharide, comprising steps of: i. contacting a homogeneous polymer solution and a template solution; ii. carrying out a phase inversion of the resulting solution; and iii. removing the template.
[CLAIM 6] A process for forming a polymeric substrate that binds lipopolysaccharide, comprising steps of: i. contacting a monomer solution and a template solution; ii. reacting cross-linking groups of the monomers to form a polymer; and iii. removing the template.
[CLAIM 7] The process according to either of claims 5 and 6, further comprising the step of making a membrane.
[CLAIM 8] The process according to any of claims 5 to 7, wherein the template solution comprises at least one of heptose and 2-keto-3-deoxyoctonic acid.
[CLAIM 9] A method for the removal of lipopolysaccharide from a suspension comprising steps of: i. providing a polymeric substrate that binds lipopolysaccharide; and ii. contacting the suspension with the polymeric substrate.
[CLAIM 10] The method according to claim 9, wherein the polymeric substrate is in the form of a membrane.
[CLAIM 11] The method according to claim 9, wherein the polymeric substrate is in the form of discrete particles.
[CLAIM 12] The method according to claim 9, wherein the polymeric substrate is attached to a solid state support.
[CLAIM 13] The method according to any one of claims 9 to 12, wherein the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid.
[CLAIM 14] The method according to any one of claims 9 to 13, wherein the lipopolysaccharide is from Gram-negative bacteria.
[CLAIM 15] The method according to claim 14, wherein the Gram-negative bacteria are proteobacteria, cyanobacteria, spirochaetes, green sulphur bacteria, green non-sulphur bacteria, crenarchaeota or nosocomial bacteria.
[CLAIM 16] The method according to any one of claims 9 to 15, wherein the

suspension comprises water.

[CLAIM 17] The method according to any one of claims 9 to 16, wherein the suspension comprises a pharmaceutical ingredient.

[CLAIM 18] The method according to claim 17, wherein the pharmaceutical ingredient is a bacterial vaccine.

[CLAIM 19] The membrane, process or method according to any preceding claim, wherein the polymeric substrate comprises one or more polar groups.

[CLAIM 20] The membrane, process or method according to claim 19, wherein the polymeric substrate comprises one or more hydroxyl groups.

[CLAIM 21] The membrane, process or method according to any preceding claim, wherein the polymeric substrate comprises poly(ethylene-co-vinyl alcohol).

[CLAIM 22] The membrane, process or method according to claim 21, wherein the ratio of ethylene: co-vinyl alcohol in the poly(ethylene-co-vinyl alcohol) is 30-60:70-40.

[CLAIM 23] A polymeric substrate produced by the process according to any one of claims 5 to 7.

EPO
Publication No. EP 2244828 A2 (Update 201072 E)
Publication Date: 20101103
**LIPOPOLYSACCHARID-DEKONTAMINATION
LIPOPOLYSACCHARIDE DECONTAMINATION
DECONTAMINATION DE LIPOPOLYSACCHARIDE**
Assignee: Novartis AG, Lichtstrasse 35, 4056 Basel, CH (NOVS)
Inventor: COSTANTINO, Paolo, Novartis VaccinesDiagnostics, Via Fiorentina 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, One Southampton Row, London, WC1B 5HA, GB
Language: EN
Application: EP 2009700597 A 20090107 (Local application)
WO 2009IB133 A 20090107 (PCT Application)
Priority: GB 2008228 A 20080107
Related Publication: WO 2009087571 A (Based on OPI patent)
Designated States: (Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR AL BA RS
Original IPC: B01D-61/00(B,I,H,EP,20060101,20090804,A,L)
B01D-61/00(B,I,M,98,20060101,20090804,C)
B01D-67/00(B,I,H,EP,20060101,20090804,A,L)
B01D-67/00(B,I,M,98,20060101,20090804,C)
B01J-20/22(B,I,M,98,20060101,20090804,C)
B01J-20/26(B,I,H,EP,20060101,20090804,A,F)
B01J-20/28(B,I,H,EP,20060101,20090804,A,L)
B01J-20/28(B,I,M,98,20060101,20090804,C)
Current IPC: B01D-61/00(B,I,H,EP,20060101,20090804,A,L)
B01D-61/00(B,I,M,98,20060101,20090804,C)
B01D-67/00(B,I,H,EP,20060101,20090804,A,L)
B01D-67/00(B,I,M,98,20060101,20090804,C)
B01J-20/22(B,I,M,98,20060101,20090804,C)
B01J-20/26(B,I,H,EP,20060101,20090804,A,F)
B01J-20/28(B,I,H,EP,20060101,20090804,A,L)
B01J-20/28(B,I,M,98,20060101,20090804,C)
Original Abstract: Materials and methods for the selective removal of lipopolysaccharide during the purification of molecules of biopharmaceutical interest are based on a polymeric substrate that binds lipopolysaccharide. Preferably, the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid. The substrate can be formed by a process comprising: (i) contacting a homogeneous polymer solution and a template solution; (ii) carrying out a phase inversion of the resulting solution; and (iii) removing the

template.

Japan
Publication No. JP 2011508772 W (Update 201121 E)
Publication Date: 20110317
Language: JA (15 pages)
Application: JP 2010541129 A 20090107 (Local application)
WO 2009IB133 A 20090107 (PCT Application)
Priority: GB 2008228 A 20080107
Related Publication: WO 2009087571 A (Based on OPI patent)
Original IPC: A61K-39/00(B,I,H,JP,20060101,20110218,A,L)
A61K-39/02(B,I,H,JP,20060101,20110218,A,F)
A61K-39/07(B,I,H,JP,20060101,20110218,A,L)
A61K-47/32(B,I,H,JP,20060101,20110218,A,L)
A61K-9/10(B,I,H,JP,20060101,20110218,A,L)
B01D-69/00(B,I,H,JP,20060101,20110218,A,L)
B01D-71/38(B,I,H,JP,20060101,20110218,A,L)
Current IPC: A61K-39/00(B,I,H,JP,20060101,20110218,A,L)
A61K-39/02(B,I,H,JP,20060101,20110218,A,F)
A61K-39/07(B,I,H,JP,20060101,20110218,A,L)
A61K-47/32(B,I,H,JP,20060101,20110218,A,L)
A61K-9/10(B,I,H,JP,20060101,20110218,A,L)
B01D-69/00(B,I,H,JP,20060101,20110218,A,L)
B01D-71/38(B,I,H,JP,20060101,20110218,A,L)
Current JP FI-Terms: A61K-39/02 (main, A) A61K-39/00 D (secondary, B)
A61K-39/07 (secondary, B) A61K-47/32 (secondary, B) A61K-9/10
(secondary, B) B01D-69/00 (secondary, B) B01D-71/38 (secondary, B)
Current JP F-Terms: 4C076 4C085 4D006 4C085AA03 4C076AA22 4C085BA07
4C085BA15 4C085CC07 4C076CC31 4C085DD37 4C085EE01 4C076EE03 4C076EE06
4C076FF70 4D006GA01 4C076GG43 4D006MC34 4D006NA54 4D006PA01 4D006PB02
4D006PB70 4D006PC43

United States
Publication No. US 20100282684 A1 (Update 201074 E)
Publication Date: 20101111
LIPOPOLYSACCHARIDE DECONTAMINATION
Assignee: Costantino, Paolo, Siena, IT Residence: IT (COST-I)
Ciardelli, Gianluca, Pisa, IT Residence: IT (CIAR-I)
Barbani, Niccoletta, Pisa, IT Residence: IT (BARB-I)
Inventor: Costantino, Paolo, Siena, IT Residence: IT
Ciardelli, Gianluca, Pisa, IT Residence: IT
Barbani, Niccoletta, Pisa, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY-
X100B, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2010744306 A 20100716 (Local application)
WO 2009IB133 A 20090107 (PCT Application)
Priority: GB 2008228 A 20080107
Original IPC: B01D-15/04(B,I,H,US,20060101,20101111,A,F)
B01D-15/04(B,I,M,98,20060101,20101111,C)
C08F-118/00(B,I,M,98,20060101,20101111,C)
C08F-118/02(B,I,H,US,20060101,20101111,A,L)
Current IPC: B01D-15/04(B,I,H,US,20060101,20101111,A,F)
B01D-15/04(B,I,M,98,20060101,20101111,C)
C08F-118/00(B,I,M,98,20060101,20101111,C)
C08F-118/02(B,I,H,US,20060101,20101111,A,L)
Current ECLA class: B01D-61/00 B01D-67/00K18D B01J-20/26 B01J-20/28D24
Current ECLA ICO class: L01D-323:24
Current US Class (main): 210-691000
Current US Class (secondary): 210-690000 526-319000
Original US Class (main): 210691
Original US Class (secondary): 210690 526319

Original Abstract: Materials and methods for the selective removal of lipopolysaccharide during the purification of molecules of bio-pharmaceutical interest are based on a polymeric substrate that binds lipopolysaccharide. Preferably, the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid. The substrate can be formed by a process comprising: (i) contacting a homogeneous polymer solution and a template solution; (ii) carrying out a phase inversion of the resulting solution; and (iii) removing the template.

Claim:

1.

1. A membrane for adsorption of lipopolysaccharide, comprising a polymeric substrate that binds lipopolysaccharide.

WIPO
Publication No. WO 2009087571 A2 (Update 200950 B)
Publication Date: 20090716
**LIPOPOLYSACCHARIDE DECONTAMINATION
DECONTAMINATION DE LIPOPOLYSACCHARIDE**
Assignee: ~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basle, CH Residence: CH Nationality: CH (NOVS)
~(only US)~ COSTANTINO, Paolo, Novartis Vaccines Diagnostics, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: COSTANTINO, Paolo, Novartis Vaccines Diagnostics, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (13 pages, 2 drawings)
Application: WO 2009IB133 A 20090107 (Local application)
Priority: GB 2008228 A 20080107
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: B01D-61/00(B,I,H,EP,20060101,A,L)
B01D-61/00(B,I,M,98,20060101,C) B01D-67/00(B,I,H,EP,20060101,A,L)
B01D-67/00(B,I,M,98,20060101,C) B01J-20/22(B,I,M,98,20060101,C)
B01J-20/26(B,I,H,EP,20060101,A,F) B01J-20/28(B,I,H,EP,20060101,A,L)
B01J-20/28(B,I,M,98,20060101,C)
Current IPC: B01D-61/00(B,I,H,EP,20060101,20090716,A,L)
B01D-61/00(B,I,H,EP,20090101,20090716,C,L)
B01D-67/00(B,I,H,EP,20060101,20090716,A,L)
B01D-67/00(B,I,H,EP,20090101,20090716,C,L)
B01J-20/22(B,I,H,EP,20090101,20090716,C,F)
B01J-20/26(B,I,H,EP,20060101,20090716,A,F)
B01J-20/28(B,I,H,EP,20060101,20090716,A,L)
B01J-20/28(B,I,H,EP,20090101,20090716,C,L)
Current ECLA class: B01D-61/00 B01D-67/00K18D B01J-20/26 B01J-20/28D24
Current ECLA ICO class: L01D-323:24
Original Abstract: Materials and methods for the selective removal of lipopolysaccharide during the purification of molecules of biopharmaceutical interest are based on a polymeric substrate that binds lipopolysaccharide. Preferably, the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid. The substrate can be formed by a process comprising: (i) contacting a homogeneous polymer solution and a template solution; (ii) carrying out a phase inversion of the resulting solution; and (iii) removing the

template.
L'invention concerne des matieres et des procedes pour le retrait selectif de lipopolysaccharide durant la purification de molecules d'interet biopharmaceutique qui sont fondes sur un substrat polymere qui se lie au lipopolysaccharide. De preference, le substrat polymere est selectif pour au moins l'un parmi l'heptose et l'acide 2-ceto-3-desoxyoctonique. Le substrat peut etre forme par un procede consistant a: (i) mettre en contact une solution polymere homogene et une solution modele; (ii) a realiser une inversion de phase de la solution resultante; et (iii) a retirer le modele.

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Publication Date: 20090903
LIPOPOLYSACCHARIDE DECONTAMINATION
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BARBANI N, IT
CIARDELLI G, IT
COSTANTINO P, IT
Language: EN
Application: WO 2009IB133 A 20090107 (Local application)
Priority: GB 2008228 A 20080107
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: B01D-61/00(B,I,H,EP,20060101,A,L)
B01D-61/00(B,I,M,98,20060101,C) B01D-67/00(B,I,H,EP,20060101,A,L)
B01D-67/00(B,I,M,98,20060101,C) B01J-20/22(B,I,M,98,20060101,C)
B01J-20/26(B,I,H,EP,20060101,A,F) B01J-20/28(B,I,H,EP,20060101,A,L)
B01J-20/28(B,I,M,98,20060101,C)
Current IPC: B01D-61/00(B,I,H,EP,20060101,20090903,A,L)
B01D-61/00(B,I,H,EP,20090101,20090903,C,L)
B01D-67/00(B,I,H,EP,20060101,20090903,A,L)
B01D-67/00(B,I,H,EP,20090101,20090903,C,L)
B01J-20/22(B,I,H,EP,20090101,20090903,C,F)
B01J-20/26(B,I,H,EP,20060101,20090903,A,F)
B01J-20/28(B,I,H,EP,20060101,20090903,A,L)
B01J-20/28(B,I,H,EP,20090101,20090903,C,L)
Current ECLA class: B01D-61/00 B01D-67/00K18D B01J-20/26 B01J-20/28D24
Current ECLA ICO class: L01D-323:24
Original Abstract: Materials and methods for the selective removal of lipopolysaccharide during the purification of molecules of biopharmaceutical interest are based on a polymeric substrate that binds lipopolysaccharide. Preferably, the polymeric substrate is selective for at least one of heptose and 2-keto-3-deoxyoctonic acid. The substrate can be formed by a process comprising: (i) contacting a homogeneous polymer solution and a template solution; (ii) carrying out a phase inversion of the resulting solution; and (iii) removing the template.

10/7/6 (Item 6 from file: 351)
DIALOG(R)File 351:Derwent WPI

0019248030
WPI ACC NO: 2009-L02218/200946

Cultivating Streptococcus for ****capsular**** ****polysaccharide**** (cps) production comprises providing an inoculum of a strain of Streptococcus expressing the cps, and cultivating the strain by fermentation

Patent Assignee: NOVARTIS AG (NOVS); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)

Inventor: BAZZOCCHI G; BERTI F; CICALA C; CICALA C M; CONSTANTINO P; COSTANTINO P; FONTANI S; NORELLI F; OLIVIERI R; BAZZOCCHI G, CH; BERTI F, CH; CICALA C M, CH; COSTANTINO P, CH; FONTANI S, CH; NORELLI F, CH; OLIVIERI R, CH

Patent Family (9 patents, 123 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2009081276	A2	20090702	WO 2008IB3729	A	20081219	200946	B
WO 2009081276	A3	20090903	WO 2008IB3729	A	20081219	200958	E
AU 2008339553	A1	20090702	AU 2008339553	A	20081219	201050	E
CA 2708878	A1	20090702	CA 2708878	A	20081219	201064	E
			WO 2008IB3729	A	20081219		
			CA 2708878	A	20100610		
EP 2235159	A2	20101006	EP 2008864247	A	20081219	201065	E
			WO 2008IB3729	A	20081219		
US 20100272755	A1	20101028	US 20078941	P	20071220	201071	E
			WO 2008IB3729	A	20081219		
			US 2010747914	A	20100613		
IN 201002275	P2	20101008	WO 2008IB3729	A	20081219	201072	E
			IN 2010KN2275	A	20100622		
CN 101932698	A	20101229	CN 200880126144	A	20081219	201109	E
			WO 2008IB3729	A	20081219		
JP 2011507501	W	20110310	WO 2008IB3729	A	20081219	201118	E
			JP 2010538947	A	20081219		

Priority Applications (no., kind, date): US 20078941 P 20071220; US 20078941 P 20071220; GB 200818453 A 20081008

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2009081276	A2	EN	159	30	

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

WO 2009081276	A3	EN			

National Designated States,Confirmed: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

AU 2008339553	A1	EN			Based on OPI patent WO 2009081276
CA 2708878	A1	EN			PCT Application WO 2008IB3729
					PCT national entry CA 2708878
					Based on OPI patent WO 2009081276
EP 2235159	A2	EN			PCT Application WO 2008IB3729
					Based on OPI patent WO 2009081276

Regional Designated States,Confirmed: AT BE BG CH CY CZ DE DK EE ES FI FR

GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR AL BA MK RS

US 20100272755	A1	EN		Related to Provisional US 20078941 PCT Application WO 2008IB3729
IN 201002275	P2	EN		PCT Application WO 2008IB3729
CN 101932698	A	ZH		PCT Application WO 2008IB3729 Based on OPI patent WO 2009081276
JP 2011507501	W	JA	120	PCT Application WO 2008IB3729 Based on OPI patent WO 2009081276

Alerting Abstract WO A2

NOVELTY - Cultivating ~Streptococcus ~ for production of cps on a manufacturing scale comprises providing an inoculum of a strain of ~Streptococcus ~ expressing the cps, and cultivating the strain by fermentation, where the cultivating comprises a linear addition of a carbon source to a cultivating medium, and does not use an algorithm to control the cultivating by monitoring a pH of the cultivating medium.

DESCRIPTION - INDEPENDENT CLAIMS are: (1) a cultivating medium comprising a ~Streptococcus ~ strain, a phosphate source, a carbon source, a vitamin source, and an amino acid source to grow ~Streptococcus ~ , where the vitamin source consists of six or fewer vitamins selected from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride and folic acid, where two of the vitamins have to be calcium pantothenate and niacinamide; (2) a cultivating medium comprising a ~Streptococcus ~ strain, a yeast extract, a phosphate source, a carbon source, a vitamin source, and optionally an amino acid source to grow ~Streptococcus ~ , where the vitamin source consists of four or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, where one of the vitamins has to be biotin; #a method for purifying a cps from ~Streptococcus agalactiae ~ by a step of filtration using an adherent filter; and (3) a method for producing a purified cps by providing a crude isolate containing a cps, removing an alcohol precipitate formed by contacting the crude isolate with an alcohol solution, filtering to remove smaller molecular weight compounds while retaining the cps, and removing protein contaminants with a protein adherent filter to produce the purified cps.

ACTIVITY - Virucide; Antiinflammatory; Respiratory-Gen; Immunostimulant. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The method and medium are useful for cultivating ~Streptococcus ~ for production of cps (claimed). The cps and composition are used in therapy, e.g. for manufacturing a medicament for the treatment of disease, preferably the disease is influenza or pneumonia, and for eliciting systemic and/or mucosal immunity.

ADVANTAGE - The present invention provides a simplified purification procedure that will produce higher levels of purity with fewer complicated and/or expensive purification steps. It provides a purification procedure that provides a good yield of cps whatever the initial purity of the ****polysaccharide****.

Technology Focus

BIOTECHNOLOGY - Preferred Method: The method for cultivating ~Streptococcus ~ for production of cps on a manufacturing scale further comprises recovering the cps. The strain of ~Streptococcus ~ further comprises ~S. agalactiae ~ , where the strain of S. agalactiae is 090, H36b, CBJ111, or M781. An optical density (OD) of the inoculum is 0.6-1.8. A pH of the cultivating medium is 6.0-7.5, preferably 7.3. A temperature of the cultivating medium is 34-38(deg) C, preferably 36(deg) C. The carbon source further comprises glucose. The cultivation further comprises monitoring an OD of the cultivating medium such that when the OD reaches a

designated level, the linear addition of a carbon source is initiated, where the designated level is selected to achieve a higher volumetric production of cps. The designated level is 9.8-10.2, preferably 10. The cultivation further comprises monitoring an OD of the cultivating medium such that when the OD reaches a first and second instantaneous addition level, two instantaneous additions of yeast extract are initiated prior to the linear addition of a carbon source. The first and second instantaneous addition levels are selected to achieve a higher volumetric production of cps. The first instantaneous addition level is 2.8-3.2, preferably 3.0. The second instantaneous addition level is 4.3-4.7, preferably 4.5. The cultivating medium is a defined medium comprising a phosphate source, a mineral source, a carbon source, a vitamin source, and an amino acid source to grow ~Streptococcus ~ , where the vitamin source consists of six or fewer vitamins selected from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride and folic acid, where two of the vitamins have to be calcium pantothenate and niacinamide. The cultivating medium is a complex medium comprising a yeast extract, a phosphate source, a carbon source, a vitamin source, and optionally an amino acid source to grow ~Streptococcus ~ , where the vitamin source consists of four or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, where one of the vitamins has to be biotin. The method for purifying a cps from ~Streptococcus ~ agalactiae does not include a step of cationic detergent treatment to precipitate the cps followed by a step of re-solubilization of the cps, where the adherent filter is a protein adherent filter, and where the adherent filter is a carbon filter. The step of filtration using an adherent filter is preceded by (i) alcoholic precipitation of contaminating proteins and/or nucleic acids, and (ii) diafiltration. The step of filtration using an adherent filter is followed by (iv) re-N-acetylation, and (v) diafiltration. The method for producing purified cps further comprises re-N-acetylating the purified cps, precipitating the purified cps, and formulating a vaccine with the cps as a component. The removing step comprises addition of an alcohol solution to a concentration sufficient to precipitate nucleic acid contaminants but not the cps, where the alcohol solution comprises ethanol. The alcohol solution further comprises calcium chloride (CaCl 2). The alcohol solution is added to a concentration of 10-50% ethanol, preferably 30% ethanol. The protein adherent filter is an activated carbon filter. Preferred Medium: In the cultivating medium of (1), the phosphate source consists of potassium hydrogen phosphate (K 2 HPO 4), potassium dihydrogen phosphate (KH 2 PO 4), sodium hydrogen phosphate monohydrate (Na 2 HPO 4 .H 2 O), sodium dihydrogen phosphate monohydrate (NaH 2 PO 4 .H 2 O), or sodium chloride (NaCl). The carbon source is glucose. The vitamin source consists of 3-6, or fewer from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride, and folic acid, where two have to be calcium pantothenate and niacinamide. The vitamin source consists of calcium pantothenate and niacinamide. The amino acid source consists of 16-19 or fewer from the following list of nineteen amino acids: alanine, arginine, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, valine, aspartic acid, cysteine hydrochloride, glutamic acid, and tyrosine, where fifteen have to be arginine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, threonine, tryptophan, valine, cysteine hydrochloride, glutamic acid, and tyrosine. In the cultivating medium of (2), the vitamin source consists of 2-4 or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, where one of the vitamins has to be biotin. The vitamin source consists of biotin.

Title Terms/Index Terms/Additional Words: CULTIVATE; STREPTOCOCCUS; CAPSULE

; ****POLYSACCHARIDE****; PRODUCE; COMPRISE; INOCULATE; STRAIN; EXPRESS; FERMENTATION

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A61K-0039/04 A I	F	B	20060101
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C07H-0001/00 C I		B	20060101
C12N-0001/20 C I	F	B	20090101
C12N-0001/20 C I	L	B	20090101
C12N-0001/20 C I		B	20060101
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4C085	AA03	
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4B065	AC20	
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4B065	BB15
4C085	BB24
4B065	BB29
4B065	BC03
4B065	BC08
4B065	BD03
4B065	BD13
4B065	BD16
4B065	BD18
4B065	BD27
4B064	CA02
4B065	CA22
4B065	CA44
4B064	CC03
4B064	CC06
4C085	CC07
4B064	CC12
4B064	CC15
4B064	CD02
4B064	CD09
4B064	CD13
4B064	CD21
4B064	CE20
4B064	DA01
4C085	DD21
4C085	DD24
4C085	DD25
4C085	DD26
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**Fermentation processes for cultivating streptococci and purification
    processes for obtaining cps therefrom**
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Original Abstract: This invention is in the field of bacterial cultures, and specifically relates to the optimization of culture conditions to improve the production of bacterial capsular polysaccharides from Streptococcus strains in fed batch culture and to novel purification methods suitable for production scale purification of bacterial capsular polysaccharides from Streptococcus strains resulting in higher levels of purity than previously obtained for production scale.

Claim: [CLAIM 1] A method for cultivating Streptococcus for production of capsular polysaccharides (cps) on a manufacturing scale, wherein said method comprises (a) providing an inoculum of a strain of Streptococcus expressing the cps, and (b) cultivating the strain by fermentation, wherein said cultivating comprises a linear addition of a carbon source to a cultivating medium, and does not use an algorithm to control the cultivating by monitoring a pH of the cultivating medium.

[CLAIM 2] The method according to claim 1 further comprising step (c) recovering the capsular polysaccharide.

[CLAIM 3] The method according to claim 1 or claim 2, wherein said strain of Streptococcus further comprises Streptococcus agalactiae.

[CLAIM 4] The method according to claim 3, wherein said strain of Streptococcus agalactiae is 090, H36b, CBJ111, or M781.

[CLAIM 5] The method according to any one of claims 1-4, wherein an optical density (OD) of the inoculum is between about 0.6 and about 1.8.

[CLAIM 6] The method according to any one of claims 1-5, wherein a pH of the cultivating medium is between about 6.0 and about 7.5.

[CLAIM 7] The method according to claim 6, wherein the pH is about 7.3.

[CLAIM 8] The method according to any one of claims 1-7, wherein a temperature of the cultivating medium is between about 34 and about 38 degrees centigrade.

[CLAIM 9] The method according to claim 8, wherein the temperature is about 36 degrees centigrade.

[CLAIM 10] The method according to any one of claims 1-9, wherein said carbon source further comprises glucose.

[CLAIM 11] The method according to any one of claims 1-10, wherein said cultivating further comprises monitoring an OD of the cultivating medium such that when the OD reaches a designated level, said linear addition of a carbon source is initiated.

[CLAIM 12] The method according to claim 11, wherein said designated level is selected to achieve a higher volumetric production of cps.

[CLAIM 13] The method according to claim 11 or claim 12, wherein said designated level is between about 9.8 and about 10.2.

[CLAIM 14] The method according to claim 13, wherein said designated level is about 10.

[CLAIM 15] The method according to any one of claims 11-14, wherein said cultivating further comprises monitoring an OD of the cultivating

medium such that when the OD reaches a first and second instantaneous addition level, two instantaneous additions of yeast extract are initiated prior to said linear addition of a carbon source.

[CLAIM 16] The method according to claim 15, wherein said first and second instantaneous addition levels are selected to achieve a higher volumetric production of cps.

[CLAIM 17] The method according to claim 16, wherein said first instantaneous addition level is between about 2.8 and about 3.2.

[CLAIM 18] The method according to claim 17, wherein said first instantaneous addition level is about 3.0.

[CLAIM 19] The method according to any one of claims 16-18, wherein said second instantaneous addition level is between about 4.3 and about 4.7.

[CLAIM 20] The method according to claim 19, wherein said second instantaneous addition level is about 4.5.

[CLAIM 21] The method according to any one of claims 1-20, wherein said cultivating medium is a defined medium comprising a phosphate source, a mineral source, a carbon source, a vitamin source, and an amino acid source to grow Streptococcus, wherein said vitamin source consists of six or fewer vitamins selected from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride and folic acid, wherein two of the vitamins have to be calcium pantothenate and niacinamide.

[CLAIM 22] The method according to any one of claims 1-20, wherein said cultivating medium is a complex medium comprising a yeast extract, a phosphate source, a carbon source, a vitamin source, and optionally an amino acid source to grow Streptococcus, wherein said vitamin source consists of four or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, wherein one of the vitamins has to be biotin.

[CLAIM 23] A cultivating medium comprising a Streptococcus strain, a phosphate source, a carbon source, a vitamin source, and an amino acid source to grow Streptococcus, wherein said vitamin source consists of six or fewer vitamins selected from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride and folic acid, wherein two of the vitamins have to be calcium pantothenate and niacinamide.

[CLAIM 24] The cultivating medium according to claim 23, wherein said Streptococcus is Streptococcus agalactiae.

[CLAIM 25] The cultivating medium according to claim 23 or claim 24, wherein said phosphate source consists of K2HPO4, KH2PO4, Na2HPO4-H2O, NaH2PO4-H2O, or NaCl.

[CLAIM 26] The cultivating medium according to any one of claims 23-25, wherein said carbon source is glucose.

[CLAIM 27] The cultivating medium according to any one of claims 23-26, wherein said vitamin source consists of six or fewer from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride, and folic acid, wherein two have to be calcium pantothenate and niacinamide.

[CLAIM 28] The cultivating medium according to any one of claims 23-26, wherein said vitamin source consists of five or fewer from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride, and folic acid, wherein two have to be calcium pantothenate and niacinamide.

[CLAIM 29] The cultivating medium according to any one of claims 23-26, wherein said vitamin source consists of four or fewer from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride, and folic acid, wherein two have to be calcium

pantothenate and niacinamide.

[CLAIM 30] The cultivating medium according to any one of claims 23-26, wherein said vitamin source consists of three or fewer from the following list of seven vitamins: biotin, niacinamide, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride, and folic acid, wherein two have to be calcium pantothenate and niacinamide.

[CLAIM 31] The cultivating medium according to any one of claims 23-26, wherein said vitamin source consists of calcium pantothenate and niacinamide.

[CLAIM 32] The cultivating medium according to any one of claims 23-31, wherein said amino acid source consists of nineteen or fewer from the following list of nineteen amino acids: alanine, arginine, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, valine, aspartic acid, cysteine hydrochloride, glutamic acid, and tyrosine, wherein fifteen have to be arginine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, threonine, tryptophan, valine, cysteine hydrochloride, glutamic acid, and tyrosine.

[CLAIM 33] The cultivating medium according to any one of claims 23-31, wherein said amino acid source consists of eighteen or fewer from the following list of nineteen amino acids: alanine, arginine, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, valine, aspartic acid, cysteine hydrochloride, glutamic acid, and tyrosine, wherein fifteen have to be arginine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, threonine, tryptophan, valine, cysteine hydrochloride, glutamic acid, and tyrosine.

[CLAIM 34] The cultivating medium according to any one of claims 23-31, wherein said amino acid source consists of seventeen or fewer from the following list of nineteen amino acids: alanine, arginine, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, valine, aspartic acid, cysteine hydrochloride, glutamic acid, and tyrosine, wherein fifteen have to be arginine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, threonine, tryptophan, valine, cysteine hydrochloride, glutamic acid, and tyrosine.

[CLAIM 35] The cultivating medium according to any one of claims 23-31, wherein said amino acid source consists of sixteen or fewer from the following list of nineteen amino acids: alanine, arginine, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, valine, aspartic acid, cysteine hydrochloride, glutamic acid, and tyrosine, wherein fifteen have to be arginine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, threonine, tryptophan, valine, cysteine hydrochloride, glutamic acid, and tyrosine.

[CLAIM 36] The cultivating medium according to any one of claims 23-31, wherein said amino acid source consists of arginine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, threonine, tryptophan, valine, cysteine hydrochloride, glutamic acid, and tyrosine.

[CLAIM 37] A cultivating medium comprising a Streptococcus strain, a yeast extract, a phosphate source, a carbon source, a vitamin source, and optionally an amino acid source to grow Streptococcus, wherein said vitamin source consists of four or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, wherein one of the vitamins has to be biotin.

[CLAIM 38] The cultivating medium according to claim 37, wherein said Streptococcus is Streptococcus agalactiae.

[CLAIM 39] The cultivating medium according to claim 37 or claim 38, wherein said vitamin source consists of four or fewer vitamins selected

from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, wherein one of the vitamins has to be biotin.

[CLAIM 40] The cultivating medium according to claim 37 or claim 38, wherein said vitamin source consists of three or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, wherein one of the vitamins has to be biotin.

[CLAIM 41] The cultivating medium according to claim 37 or claim 38, wherein said vitamin source consists of two or fewer vitamins selected from the following list of five vitamins: biotin, niacinamide, riboflavin, thiamine hydrochloride and pyridoxine hydrochloride, wherein one of the vitamins has to be biotin.

[CLAIM 42] The cultivating medium according to claim 37 or claim 38, wherein said vitamin source consists of biotin.

[CLAIM 43] A method for purifying a capsular polysaccharide from Streptococcus agalactiae comprising a step of filtration using an adherent filter.

[CLAIM 44] The method according to claim 43, wherein the method does not include a step of cationic detergent treatment to precipitate the capsular polysaccharide followed by a step of re-solubilization of the capsular polysaccharide.

[CLAIM 45] The method according to claim 43 or claim 44, wherein the adherent filter is a protein adherent filter.

[CLAIM 46] The method according to any of claims 43-45, wherein the adherent filter is a carbon filter.

[CLAIM 47] The method according to any of claims 43-46, wherein the step of filtration using an adherent filter is preceded by the following steps: (i) alcoholic precipitation of contaminating proteins and/or nucleic acids; and (ii) diafiltration;

[CLAIM 48] The method according to any of claims 43-47, wherein the step of filtration using an adherent filter is followed by the following steps: (iv) re-N-acetylation; (v) diafiltration.

[CLAIM 49] A method for production of a purified capsular polysaccharide comprising: (a) providing a crude isolate containing a capsular polysaccharide; (b) removing an alcohol precipitate formed by contacting the crude isolate with an alcohol solution; (c) filtering to remove smaller molecular weight compounds while retaining the capsular polysaccharide; and (d) removing protein contaminants with a protein adherent filter to produce the purified capsular polysaccharide.

[CLAIM 50] The method according to claim 49 further comprising step (e) re-N-acetylating the purified capsular polysaccharide.

[CLAIM 51] The method according to claim 50 further comprising step (f) precipitating the purified capsular polysaccharide.

[CLAIM 52] The method according to claim 51 further comprising step (g) formulating a vaccine with the capsular polysaccharide as a component.

[CLAIM 53] The method according to any one of claims 49-52, wherein step (b) comprises addition of an alcohol solution to a concentration sufficient to precipitate nucleic acidcontaminants but not the capsular polysaccharide.

[CLAIM 54] The method according to claim 53, wherein said alcohol solution comprises ethanol.

[CLAIM 55] The method according to claim 53 or claim 54, wherein said alcohol solution further comprises CaCl2.

[CLAIM 56] The method according to claim 54 or claim 55, wherein said alcohol solution is added to a concentration of between about 10 % and about 50% ethanol.

[CLAIM 57] The method according to claim 56, wherein said alcohol solution is added to a concentration of about 30% ethanol.

[CLAIM 58] The method according to any one of claims 49-57, wherein the protein adherent filter is an activated carbon filter.

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**FERMENTATIONSVERFAHREN ZUR KULTIVIERUNG VON STREPTOKOKKEN UND REINIGUNGSVERFAHREN ZUR GEWINNUNG VON CPS DARAUS
FERMENTATION PROCESSES FOR CULTIVATING STREPTOCOCCI AND PURIFICATION PROCESSES FOR OBTAINING CPS THEREFROM
PROCEDES DE FERMENTATION POUR CULTIVER DES STREPTOCOQUES ET PROCEDES DE PURIFICATION POUR OBTENIR DES CPS A PARTIR DE CEUX-CI**
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C12N-1/20(B,I,M,98,20060101,20090722,C)
C12P-19/00(B,I,M,98,20060101,20090722,C)
C12P-19/04(B,I,H,EP,20060101,20090722,A,L)
Current IPC: A61K-39/04(B,I,H,EP,20060101,20090722,A,L)
A61K-39/04(B,I,M,98,20060101,20090722,C)
C12N-1/20(B,I,H,EP,20060101,20090722,A,F)
C12N-1/20(B,I,M,98,20060101,20090722,C)
C12P-19/00(B,I,M,98,20060101,20090722,C)
C12P-19/04(B,I,H,EP,20060101,20090722,A,L)
Current ECLA class: C08B-37/00P C12N-1/20 C12P-19/04
Current ECLA ICO class: K61K-39:00
Original Abstract: This invention is in the field of bacterial cultures, and specifically relates to the optimization of culture conditions to improve the production of bacterial capsular polysaccharides from Streptococcus strains in fed batch culture and to novel purification methods suitable for production scale purification of bacterial capsular polysaccharides from Streptococcus strains resulting in higher levels of purity than previously obtained for production scale.

India
Publication No. IN 201002275 P2 (Update 201072 E)
Publication Date: 20101008
Fermentation processes for cultivating streptococci and purification processes for obtaining capsular polysaccharide of streptococci
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: CONSTANTINO P
NORELLI F
BERTI F
CICALA C M
BAZZOCCHI G
FONTANI S

OLIVIERI R
Language: EN
Application: IN 2010KN2275 A 20100622 (Local application)
WO 2008IB3729 A 20081219 (PCT Application)
Priority: US 20078941 P 20071220
Original IPC: C12N-1/20(A) C12P-19/04(B)
Current IPC: C12N-1/20(A) C12P-19/04(B)

Japan
Publication No. JP 2011507501 W (Update 201118 E)
Publication Date: 20110310
Language: JA (120 pages)
Application: JP 2010538947 A 20081219 (Local application)
WO 2008IB3729 A 20081219 (PCT Application)
Priority: US 20078941 P 20071220
GB 200818453 A 20081008
Related Publication: WO 2009081276 A (Based on OPI patent)
Original IPC: A61K-39/00(B,I,H,JP,20060101,20110210,A,L)
A61K-39/39(B,I,H,JP,20060101,20110210,A,L)
A61P-31/04(B,I,H,JP,20060101,20110210,A,L)
C12N-1/20(B,I,H,JP,20060101,20110210,A,L)
C12P-19/04(B,I,H,JP,20060101,20110210,A,L)
Current IPC: A61K-39/00(B,I,H,JP,20060101,20110210,A,L)
A61K-39/39(B,I,H,JP,20060101,20110210,A,L)
A61P-31/04(B,I,H,JP,20060101,20110210,A,L)
C12N-1/20(B,I,H,JP,20060101,20110210,A,L)
C12P-19/04(B,I,H,JP,20060101,20110210,A,L)
Current JP FI-Terms: C12N-1/20 A (main, A) A61K-39/00 G (secondary, B)
A61K-39/39 (secondary, B) A61P-31/04 (secondary, B) C12P-19/04 C
(secondary, B) C12N-1/20 A (linked, C) C12P-19/04 C (linked, C)
C12R-1:46 (linked, C)
Current JP F-Terms: 4B064 4B065 4C085 4C085AA03 4B065AA49X 4B065AC20
4B064AF17 4C085BA14 4C085BA38 4B065BB02 4B065BB06 4B065BB12 4B065BB15
4C085BB24 4B065BB29 4B065BC03 4B065BC08 4B065BD03 4B065BD13 4B065BD16
4B065BD18 4B065BD27 4B064CA02 4B065CA22 4B065CA44 4B064CC03 4B064CC06
4C085CC07 4B064CC12 4B064CC15 4B064CD02 4B064CD09 4B064CD13 4B064CD21
4B064CE20 4B064DA01 4C085DD21 4C085DD24 4C085DD25 4C085DD26 4C085DD31
4C085DD37 4C085DD41 4C085EE01 4C085GG01 4C085GG08 4C085GG10

United States
Publication No. US 20100272755 A1 (Update 201071 E)
Publication Date: 20101028
**FERMENTATION PROCESSES FOR CULTIVATING STREPTOCOCCI AND PURIFICATION
PROCESSES FOR OBTAINING CPS THEREFROM**
Assignee: NOVARTIS VACCINES AND DIAGNOSTICS SRL, Siena, IT (NOVS)
Costantino, Paolo, Colle Val d'Elsa, IT Residence: IT
Norelli, Francesco, Siena, IT Residence: IT
Berti, Francesco, Colle Val d'Elsa, IT Residence: IT
Olivieri, Roberto, Siena, IT Residence: IT
Bazzocchi, Giulia, Vicenza, IT Residence: IT
Cicala, Concetta Maria, Castellina Scalo, IT Residence: IT
Fontani, Silvia, Siena, IT Residence: IT
Inventor: COSTANTINO P, IT
Norelli, Francesco, Siena, IT Residence: IT
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Olivieri, Roberto, Siena, IT Residence: IT
Bazzocchi, Giulia, Vicenza, IT Residence: IT
Cicala, Concetta Maria, Castellina Scalo, IT Residence: IT
Fontani, Silvia, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY-
X100B, P.O. BOX 8097, Emeryville, CA, US
Language: EN

Application: US 2010747914 A 20100613 (Local application)
  WO 2008IB3729 A 20081219 (PCT Application)
  US 20078941 P 20071220 (Related to Provisional)
Priority: GB 200818453 A 20081008
Original IPC: A61K-39/09(B,I,H,US,20060101,20101028,A,F)
    A61K-39/09(B,I,M,98,20060101,20101028,C)
    C07H-1/00(B,I,H,US,20060101,20101028,A,L)
    C07H-1/00(B,I,M,98,20060101,20101028,C)
    C12N-1/20(B,I,H,US,20060101,20101028,A,L)
    C12N-1/20(B,I,M,98,20060101,20101028,C)
    C12P-19/00(B,I,M,98,20060101,20101028,C)
    C12P-19/04(B,I,H,US,20060101,20101028,A,L)
    C12Q-3/00(B,I,H,US,20060101,20101028,A,L)
    C12Q-3/00(B,I,M,98,20060101,20101028,C)
Current IPC: A61K-39/09(B,I,H,US,20060101,20101028,A,F)
    A61K-39/09(B,I,M,98,20060101,20101028,C)
    C07H-1/00(B,I,H,US,20060101,20101028,A,L)
    C07H-1/00(B,I,M,98,20060101,20101028,C)
    C12N-1/20(B,I,H,US,20060101,20101028,A,L)
    C12N-1/20(B,I,M,98,20060101,20101028,C)
    C12P-19/00(B,I,M,98,20060101,20101028,C)
    C12P-19/04(B,I,H,US,20060101,20101028,A,L)
    C12Q-3/00(B,I,H,US,20060101,20101028,A,L)
    C12Q-3/00(B,I,M,98,20060101,20101028,C)
Current ECLA class: C08B-37/00P C12N-1/20 C12P-19/04
Current ECLA ICO class: K61K-39:00
Current US Class (main): 424-244100
Current US Class (secondary): 435-003000 435-101000 435-253400 536-123100
Original US Class (main): 424244.1
Original US Class (secondary): 4353 435101 435253.4 536123.1
Original Abstract: This invention is in the field of bacterial cultures and specifically relates to the optimization of culture conditions to improve the production of bacterial capsular polysaccharides from ~Streptococcus~ strains in fed batch culture and to novel purification methods suitable for production scale purification of bacterial capsular polysaccharides from ~Streptococcus~ strains resulting in higher levels of purity than previously obtained for production scale.

Claim:
  1.
1. A method for cultivating ~Streptococcus~ for production of capsular polysaccharides (cps) on a manufacturing scale, wherein said method comprises (a) providing an inoculum of a strain of ~Streptococcus~ expressing the cps, and (b) cultivating the strain by fermentation, wherein said cultivating comprises a linear addition of a carbon source to a cultivating medium, and does not use an algorithm to control the cultivating by monitoring a pH of the cultivating medium.

WIPO
Publication No. WO 2009081276 A2 (Update 200946 B)
Publication Date: 20090702
**FERMENTATION PROCESSES FOR CULTIVATING STREPTOCOCCI AND PURIFICATION PROCESSES FOR OBTAINING CPS THEREFROM
  PROCEDES DE FERMENTATION POUR CULTIVER DES STREPTOCOQUES ET PROCEDES DE PURIFICATION POUR OBTENIR DES CPS A PARTIR DE CEUX-CI**
Assignee: ~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basel, CH Residence: CH Nationality: CH (NOVS)
  ~(only US)~ COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
  ~(only US)~ NORELLI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT

~(only US)~ BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ CICALA, Concetta, Maria, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BAZZOCCHI, Giulia, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ FONTANI, Silvia, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ OLIVIERI, Roberto, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BAZZOCCHI, Giulia, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
CICALA, Concetta, Maria, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
FONTANI, Silvia, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
NORELLI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
OLIVIERI, Roberto, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (159 pages, 30 drawings)
Application: WO 2008IB3729 A 20081219 (Local application)
Priority: US 20078941 P 20071220
GB 200818453 A 20081008
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-39/04(B,I,H,EP,20060101,A,L)
A61K-39/04(B,I,M,98,20060101,C) C12N-1/20(B,I,H,EP,20060101,A,F)
C12N-1/20(B,I,M,98,20060101,C) C12P-19/00(B,I,M,98,20060101,C)
C12P-19/04(B,I,H,EP,20060101,A,L)
Current IPC: A61K-39/04(B,I,H,EP,20060101,20090702,A,L)
A61K-39/04(B,I,H,EP,20090101,20090702,C,L)
C12N-1/20(B,I,H,EP,20060101,20090702,A,F)
C12N-1/20(B,I,H,EP,20090101,20090702,C,F)
C12P-19/00(B,I,H,EP,20090101,20090702,C,L)
C12P-19/04(B,I,H,EP,20060101,20090702,A,L)
Current ECLA class: C08B-37/00P C12N-1/20 C12P-19/04
Current ECLA ICO class: K61K-39:00
Original Abstract: This invention is in the field of bacterial cultures, and specifically relates to the optimization of culture conditions to improve the production of bacterial capsular polysaccharides from Streptococcus strains in fed batch culture and to novel purification methods suitable for production scale purification of bacterial capsular polysaccharides from Streptococcus strains resulting in higher levels of purity than previously obtained for production scale.
La presente invention concerne le domaine des cultures bacteriennes, et concerne specifiquement l'optimisation de conditions de culture pour ameliorer la production de polysaccharides capsulaires bacteriens a partir de souches de Streptococcus (CPS) en culture a ecoulement discontinu. L'invention concerne egalement des nouveaux procedes de

purification adaptes pour la purification a l'echelle industrielle de polysaccharides capsulaires bacteriens a partir de souches de Streptococcus resultant en des niveaux plus eleves de purete que ceux precedemment obtenus a l'echelle industrielle.

Publication No. WO 2009081276 A3 (Update 200958 E)
Publication Date: 20090903
FERMENTATION PROCESSES FOR CULTIVATING STREPTOCOCCI AND PURIFICATION PROCESSES FOR OBTAINING CPS THEREFROM
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BAZZOCCHI G, IT
BERTI F, IT
CICALA C M, IT
COSTANTINO P, IT
FONTANI S, IT
NORELLI F, IT
OLIVIERI R, IT
Language: EN
Application: WO 2008IB3729 A 20081219 (Local application)
Priority: US 20078941 P 20071220
GB 200818453 A 20081008
Designated States: (National Confirmed) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Confirmed) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-39/04(B,I,H,EP,20060101,A,L)
A61K-39/04(B,I,M,98,20060101,C) C12N-1/20(B,I,H,EP,20060101,A,F)
C12N-1/20(B,I,M,98,20060101,C) C12P-19/00(B,I,M,98,20060101,C)
C12P-19/04(B,I,H,EP,20060101,A,L)
Current IPC: A61K-39/04(B,I,H,EP,20060101,20090903,A,L)
A61K-39/04(B,I,H,EP,20090101,20090903,C,L)
C12N-1/20(B,I,H,EP,20060101,20090903,A,F)
C12N-1/20(B,I,H,EP,20090101,20090903,C,F)
C12P-19/00(B,I,H,EP,20090101,20090903,C,L)
C12P-19/04(B,I,H,EP,20060101,20090903,A,L)
Current ECLA class: C08B-37/00P C12N-1/20 C12P-19/04
Current ECLA ICO class: K61K-39:00
Original Abstract: This invention is in the field of bacterial cultures, and specifically relates to the optimization of culture conditions to improve the production of bacterial capsular polysaccharides from Streptococcus strains in fed batch culture and to novel purification methods suitable for production scale purification of bacterial capsular polysaccharides from Streptococcus strains resulting in higher levels of purity than previously obtained for production scale.

10/7/7 (Item 7 from file: 351)
DIALOG(R)File 351:Derwent WPI

0018714931
WPI ACC NO: 2009-E02825/200914
Purifying saccharide antigen-carrier protein conjugates from a mixture, comprises contacting the mixture with hydroxyapatite and collecting the free saccharide antigen-carrier protein conjugates
Patent Assignee: NOVARTIS AG (NOVS); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)

Inventor: AVERANI G; BELLUCCI C; BERTI F; BIGIO M; NORELLI F; AVERANI G, CH ; BELLUCCI C, CH; BERTI F, CH; BIGIO M, CH; NORELLI F, CH

Patent Family (7 patents, 123 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2009010877	A2	20090122	WO 2008IB2690	A	20080717	200914	B
WO 2009010877	A3	20091119	WO 2008IB2690	A	20080717	200976	E
AU 2008277353	A1	20090122	AU 2008277353	A	20080717	201016	E
EP 2180901	A2	20100505	EP 2008826340	A	20080717	201030	E
			WO 2008IB2690	A	20080717		
CA 2693936	A1	20090122	CA 2693936	A	20080717	201031	E
			WO 2008IB2690	A	20080717		
			CA 2693936	A	20100118		
CN 101795713	A	20100804	CN 200880106077	A	20080717	201058	E
			WO 2008IB2690	A	20080717		
US 20100239600	A1	20100923	WO 2008IB2690	A	20080717	201062	E
			US 2010669464	A	20100609		

Priority Applications (no., kind, date): GB 200713880 A 20070717

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2009010877	A2	EN	54	8	

National Designated States,Original: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

WO 2009010877	A3	EN			

National Designated States,Original: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

AU 2008277353	A1	EN	Based on OPI patent WO 2009010877
EP 2180901	A2	EN	PCT Application WO 2008IB2690
			Based on OPI patent WO 2009010877

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

CA 2693936	A1	EN	PCT Application WO 2008IB2690
			PCT national entry CA 2693936
			Based on OPI patent WO 2009010877
CN 101795713	A	ZH	PCT Application WO 2008IB2690
			Based on OPI patent WO 2009010877
US 20100239600	A1	EN	PCT Application WO 2008IB2690

Alerting Abstract WO A2

NOVELTY - Purifying saccharide antigen-carrier protein conjugates from a mixture, comprises contacting the mixture with hydroxyapatite and collecting the free saccharide antigen-carrier protein conjugates.

DESCRIPTION - INDEPENDENT CLAIMS are:

1.a method of preparing a pharmaceutical composition, comprising the method above, and mixing the saccharide antigen-carrier protein

conjugates with a pharmaceutically acceptable diluent or carrier; and

2.a pharmaceutical composition prepared by the latter method, for use (i) in therapy, (ii) for raising an immune response or (iii) as a vaccine.

ACTIVITY - Antibacterial. No biological data given.
MECHANISM OF ACTION - Vaccine; Protease-Inhibitor.
USE - The methods and composition are useful for purifying saccharide antigen-carrier protein conjugates from a mixture; for preparing a pharmaceutical composition; for use in therapy, for raising an immune response or as a vaccine; and for manufacturing a medicament for raising the immune response, or treating a bacterial infection (all claimed).

Technology Focus
BIOTECHNOLOGY - Preferred Method: In purifying saccharide antigen-carrier protein conjugates from the mixture, the mixture comprises free carrier protein and saccharide antigen-carrier protein conjugates. The mixture also comprises other contaminant proteins. The carrier protein is selected from tetanus toxoid, diphtheria toxoid, derivatives, ~****Neisseria**** ****meningitidis**** ~ outer membrane proteins, synthetic proteins, heat shock proteins, pertussis proteins, cytokines, lymphokines, hormones, growth factors, poly-epitope carriers, protein D of ~Haemophilus influenzae ~ , pneumolysin, pneumococcal surface protein PspA, iron uptake proteins, toxin A or B from ~C. difficile ~ and/or a polyepitope carrier such as N19. The carrier protein is tetanus toxoid, diphtheria toxoid or derivatives. The carrier protein is CRM197. The saccharide antigen has a molecular weight of 5 kDa or 50 kDa or more. Also, the saccharide antigen is a bacterial ****capsular**** saccharide. Also, the saccharide antigen is glycosylated. Furthermore, the saccharide antigen is from ~N. ****meningitidis**** ~ , ~Streptococcus pneumoniae ~ , ~Streptococcus agalactiae ~ , ~H. influenzae ~ , ~Pseudomonas aeruginosa ~ , ~Staphylococcus aureus ~ , ~E. faecalis ~ , ~E. faecium ~ , ~Y. enterocolitica ~ , ~V. cholerae ~ or ~S. typhi ~ . The carrier protein is conjugated to saccharide antigens from more than one bacterial species. The saccharide antigen is also conjugated to the carrier protein by a linker. Moreover, the method is carried out at pH 6.5-7.5, preferably at pH 7.2. Also, the method is carried out at a phosphate concentration of 50 mM or less. The hydroxyapatite is in the form of a gel, where the hydroxyapatite has a particle size of 40 mu m or more, and a dynamic binding capacity of more than 10 mg lysozyme/g. Preparing the pharmaceutical composition also comprises mixing the product with an adjuvant.

Title Terms/Index Terms/Additional Words: PURIFICATION; SACCHARIDE; ANTIGEN ; CARRY; PROTEIN; CONJUGATE; MIXTURE; COMPRISE; CONTACT; COLLECT; FREE

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
A61K-0039/09 A I L B 20060101
A61K-0039/385 A I F B 20060101
A61K-0047/48 A I F B 20060101
A61P-0031/04 A I L B 20060101
A61P-0031/12 A I L B 20060101
A61P-0037/00 A I L B 20060101
B01D-0015/00 A I L B 20060101
B01J-0020/04 A I L B 20060101
C07K-0001/14 A I L B 20060101
A61K-0039/09 C I L B 20090101
A61K-0039/385 C I B 20060101
A61K-0047/48 C I F B 20090101

A61P-0031/00 C I L B 20090101
A61P-0031/00 C I B 20060101
A61P-0037/00 C I B 20060101
B01D-0015/00 C I L B 20090101
B01J-0020/04 C I L B 20090101
C07K-0001/00 C I B 20060101
C12N S 20060101
ECLA: A61K-039/09A, A61K-047/48R2, A61K-047/48R2D, A61K-047/48R2F, A61K-047/48R2V, C07K-001/16
ICO: K61K-039:60P10
US Classification, Current Main: 424-193100; Secondary: 530-351000, 530-399000, 530-413000
US Classification, Issued: 424193.1, 530413, 530351, 530399

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B04-B04C1; B04-H01; B04-H06; B04-J01; B04-N03; B04-N09; B05-B02A3; B11-B03; B14-A01; B14-D07C; B14-G01; B14-S11; D05-H07 ; D05-H13

Original Publication Data by Authority

Australia
Publication No. AU 2008277353 A1 (Update 201016 E)
Publication Date: 20090122
Assignee: NOVARTIS AG (NOVS)
Inventor: AVERANI G
BELLUCCI C
BERTI F
BIGIO M
NORELLI F
Language: EN
Application: AU 2008277353 A 20080717 (Local application)
Priority: GB 200713880 A 20070717
Related Publication: WO 2009010877 A (Based on OPI patent)
Original IPC: A61K-47/48(B,I,H,EP,20060101,20091216,A,F)
A61K-39/09(B,I,H,EP,20060101,20091216,A,L)
A61P-31/04(B,I,H,EP,20060101,20091216,A,L)
B01D-15/00(B,I,H,EP,20060101,20091216,A,L)
B01J-20/04(B,I,H,EP,20060101,20091216,A,L)
A61K-39/09(B,I,H,EP,20090101,20091216,C,L)
A61K-47/48(B,I,H,EP,20090101,20091216,C,F)
A61P-31/00(B,I,H,EP,20090101,20091216,C,L)
B01D-15/00(B,I,H,EP,20090101,20091216,C,L)
B01J-20/04(B,I,H,EP,20090101,20091216,C,L)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20091216,A,L)
A61K-39/09(B,I,H,EP,20090101,20091216,C,L)
A61K-47/48(B,I,H,EP,20060101,20091216,A,F)
A61K-47/48(B,I,H,EP,20090101,20091216,C,F)
A61P-31/00(B,I,H,EP,20090101,20091216,C,L)
A61P-31/04(B,I,H,EP,20060101,20091216,A,L)
B01D-15/00(B,I,H,EP,20060101,20091216,A,L)
B01D-15/00(B,I,H,EP,20090101,20091216,C,L)
B01J-20/04(B,I,H,EP,20060101,20091216,A,L)
B01J-20/04(B,I,H,EP,20090101,20091216,C,L)
Current ECLA class: A61K-39/09A A61K-47/48R2 A61K-47/48R2D A61K-47/48R2F A61K-47/48R2V C07K-1/16
Current ECLA ICO class: K61K-39:60P10

Canada
Publication No. CA 2693936 A1 (Update 201031 E)

Publication Date: 20090122
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: AVERANI G, IT
  BELLUCCI C, IT
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  BIGIO M, IT
  NORELLI F, IT
Language: EN
Application: CA 2693936 A 20080717 (Local application)
  WO 2008IB2690 A 20080717 (PCT Application)
  CA 2693936 A 20100118 (PCT national entry)
Priority: GB 200713880 A 20070717
Related Publication: WO 2009010877 A (Based on OPI patent)
Original IPC: A61K-39/09(B,I,H,EP,20060101,20100319,A,L)
    A61K-39/09(B,I,M,98,20060101,20100319,C)
    A61K-47/48(B,I,H,EP,20060101,20100319,A,F)
    A61K-47/48(B,I,M,98,20060101,20100319,C)
    A61P-31/00(B,I,M,98,20060101,20100319,C)
    A61P-31/04(B,I,H,EP,20060101,20100319,A,L)
    B01D-15/00(B,I,H,EP,20060101,20100319,A,L)
    B01D-15/00(B,I,M,98,20060101,20100319,C)
    B01J-20/04(B,I,H,EP,20060101,20100319,A,L)
    B01J-20/04(B,I,M,98,20060101,20100319,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20100319,A,L)
    A61K-39/09(B,I,H,EP,20100101,20100319,C,L)
    A61K-47/48(B,I,H,EP,20060101,20100319,A,F)
    A61K-47/48(B,I,H,EP,20100101,20100319,C,F)
    A61P-31/00(B,I,H,EP,20100101,20100319,C,L)
    A61P-31/04(B,I,H,EP,20060101,20100319,A,L)
    B01D-15/00(B,I,H,EP,20060101,20100319,A,L)
    B01D-15/00(B,I,H,EP,20100101,20100319,C,L)
    B01J-20/04(B,I,H,EP,20060101,20100319,A,L)
    B01J-20/04(B,I,H,EP,20100101,20100319,C,L)
Current ECLA class: A61K-39/09A A61K-47/48R2 A61K-47/48R2D A61K-47/48R2F
    A61K-47/48R2V C07K-1/16
Current ECLA ICO class: K61K-39:60P10

China
Publication No. CN 101795713 A (Update 201058 E)
Publication Date: 20100804
Conjugate purification
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BERTI F, CH
  BERTI FRANCESCO, CH
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  AVERANI G, CH
  AVERANI GIOVANNI, CH
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  BELLUCCI C, CH
  BELLUCCI CINZIA, CH
Language: ZH
Application: CN 200880106077 A 20080717 (Local application)
  WO 2008IB2690 A 20080717 (PCT Application)
Priority: GB 200713880 A 20070717
Related Publication: WO 2009010877 A (Based on OPI patent)
Original IPC: A61K-39/09(I,CN,20060101,A,L) A61K-39/09(I,M,98,20060101,C)
    A61K-47/48(I,CN,20060101,A,F) A61K-47/48(I,M,98,20060101,C)
    A61P-31/00(I,M,98,20060101,C) A61P-31/04(I,CN,20060101,A,L)
    B01D-15/00(I,CN,20060101,A,L) B01D-15/00(I,M,98,20060101,C)
    B01J-20/04(I,CN,20060101,A,L) B01J-20/04(I,M,98,20060101,C)

Current IPC: A61K-39/09(B,I,H,CN,20060101,20100825,A,L)
A61K-39/09(B,I,H,CN,20100101,20100825,C,L)
A61K-47/48(B,I,H,CN,20060101,20100825,A,F)
A61K-47/48(B,I,H,CN,20100101,20100825,C,F)
A61P-31/00(B,I,H,CN,20100101,20100825,C,L)
A61P-31/04(B,I,H,CN,20060101,20100825,A,L)
B01D-15/00(B,I,H,CN,20060101,20100825,A,L)
B01D-15/00(B,I,H,CN,20100101,20100825,C,L)
B01J-20/04(B,I,H,CN,20060101,20100825,A,L)
B01J-20/04(B,I,H,CN,20100101,20100825,C,L)

Original Abstract: This application relates to methods for the purification of saccharide antigen-carrier protein conjugates. In particular, the invention provides a method for purifying saccharide antigen- carrier protein conjugates from free carrier protein, such as CRM197, using hydroxyapatite. The invention further relates to methods of preparing vaccines, using this method.

Claim: [CLAIM 1] A method of purifying saccharide antigen-carrier protein conjugates from a mixture, comprising contacting said mixture with hydroxyapatite and collecting the free saccharide antigen-carrier protein conjugates.

[CLAIM 2] The method according to claim 1, wherein said mixture comprises free carrier protein and saccharide antigen-carrier protein conjugates.

[CLAIM 3] The method according to claim 2, wherein the mixture further comprises other contaminant proteins.

[CLAIM 4] The method any one of foresaid claims, wherein the carrier protein is selected from tetanus toxoid, diphtheria toxoid, derivatives thereof, N. meningitidis outer membrane proteins, synthetic proteins, heat shock proteins, pertussis proteins, cytokines, lymphokines, hormones, growth factors, poly-epitope carriers, protein D of H. influenzae, pneumolysin, pneumococcal surface protein PspA, iron uptake proteins, toxin A or B from C. difficile and/or a poly epitope carrier such as N19.

[CLAIM 5] The method of any one according to claims 1-3, wherein said carrier protein is tetanus toxoid, diphtheria toxoid or derivatives thereof.

[CLAIM 6] The method according to claim 5, wherein said carrier protein is CRM197.

[CLAIM 7] The method any one of foresaid claims, wherein the saccharide antigen has a molecular weight of 50kDa or more.

[CLAIM 8] The method according to claim 7, wherein the saccharide antigen has a molecular weight of 5kDa or more.

[CLAIM 9] The method any one of foresaid claims, wherein the saccharide antigen is a bacterial capsular saccharide.

[CLAIM 10] The method any one of foresaid claims, wherein the saccharide antigen is glycosylated.

[CLAIM 11] The method any one of foresaid claims, wherein the saccharide antigen is from N. meningitidis, S.pneumoniae, S.agalactiae, E[Lambda]nfluenzae, P. aeruginosa, S. aureus, E.faecalis, E.faechim, Y.enterocolitica, V.cholerae or S. typhi.

[CLAIM 12] The method any one of foresaid claims, wherein the earner protein is conjugated to saccharide antigens from more than one bacterial species.

[CLAIM 13] The method any one of foresaid claims, wherein the saccharide antigen is conjugated to the carrier protein by a linker.

[CLAIM 14] The method any one of foresaid claims, wherein said method is carried out at pH6.5-pH7.5.

[CLAIM 15] The method any one of foresaid claims, wherein said method is carried out at pH7.2.

[CLAIM 16] The method any one of foresaid claims, wherein said method is carried out at a phosphate concentration of 50mM or less.

[CLAIM 17] The method any one of foresaid claims, wherein said hydroxy apatite is in the form of a gel.

[CLAIM 18] The method any one of foresaid claims, wherein said hydroxyapatite has a particle size of 40um or more.

[CLAIM 19] The method any one of foresaid claims, wherein said hydroxyapatite has a dynamic binding capacity of more than 10mg lysozyme per gram.

[CLAIM 20] A method of preparing a pharmaceutical composition, comprising the method any one of foresaid claims, and further comprising step iii) mixing said saccharide antigen-carrier protein conjugates obtained in step ii) with a pharmaceutically acceptable diluent or carrier

[CLAIM 21] The method according to claim 20, further comprising step (iv) mixing the product of step (iii) with an adjuvant.

[CLAIM 22] A pharmaceutical composition prepared by the method according to claim 20 or claim 21, for use (i) in therapy, (ii) for raising an immune response or (iii) as a vaccine.

[CLAIM 23] Use of a pharmaceutical composition prepared by the method according to claim 20 or claim 21 in the manufacture of a medicament for (i) raising an immune response, or (ii) treating a bacterial infection.

EPO
Publication No. EP 2180901 A2 (Update 201030 E)
Publication Date: 20100505
**KONJUGATREINIGUNG
CONJUGATE PURIFICATION
PURIFICATION DE CONJUGUES**
Assignee: Novartis AG, Lichtstrasse 35, 4056 Basel, CH (NOVS)
Inventor: AVERANI, Giovanni, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
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BERTI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
BIGIO, Massimo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
NORELLI, Francesco, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2008826340 A 20080717 (Local application)
WO 2008IB2690 A 20080717 (PCT Application)
Priority: GB 200713880 A 20070717
Related Publication: WO 2009010877 A (Based on OPI patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Original IPC: A61K-39/09(B,I,H,EP,20060101,20100224,A,L)
A61K-39/09(B,I,M,98,20060101,20100224,C)
A61K-47/48(B,I,H,EP,20060101,20100224,A,F)
A61K-47/48(B,I,M,98,20060101,20100224,C)
A61P-31/00(B,I,M,98,20060101,20100224,C)
A61P-31/04(B,I,H,EP,20060101,20100224,A,L)
B01D-15/00(B,I,H,EP,20060101,20100224,A,L)
B01D-15/00(B,I,M,98,20060101,20100224,C)
B01J-20/04(B,I,H,EP,20060101,20100224,A,L)
B01J-20/04(B,I,M,98,20060101,20100224,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20100224,A,L)
A61K-39/09(B,I,H,EP,20100101,20100224,C,L)
A61K-47/48(B,I,H,EP,20060101,20100224,A,F)
A61K-47/48(B,I,H,EP,20100101,20100224,C,F)
A61P-31/00(B,I,H,EP,20100101,20100224,C,L)
A61P-31/04(B,I,H,EP,20060101,20100224,A,L)
B01D-15/00(B,I,H,EP,20060101,20100224,A,L)
B01D-15/00(B,I,H,EP,20100101,20100224,C,L)
B01J-20/04(B,I,H,EP,20060101,20100224,A,L)
B01J-20/04(B,I,H,EP,20100101,20100224,C,L)

Current ECLA ICO class: K61K-39:60P10
Original Abstract: This application relates to methods for the purification of saccharide antigen-carrier protein conjugates. In particular, the invention provides a method for purifying saccharide antigen- carrier protein conjugates from free carrier protein, such as CRM1 97, using hydroxyapatite. The invention further relates to methods of preparing vaccines, using this method.

United States
Publication No. US 20100239600 A1 (Update 201062 E)
Publication Date: 20100923
CONJUGATE PURIFICATION
Assignee: Novartis Vaccines and Diagnostics, Sienna, IT (NOVS)
Bigio, Massimo, Siena, IT Residence: IT
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Berti, Francesco, Siena, IT Residence: IT
Bellucci, Cinzia, Siena, IT Residence: IT
Inventor: Bigio, Massimo, Siena, IT Residence: IT
Averani, Giovanni, Siena, IT Residence: IT
Norelli, Francesco, Siena, IT Residence: IT
Berti, Francesco, Siena, IT Residence: IT
Bellucci, Cinzia, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY-X100B, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2010669464 A 20100609 (Local application)
WO 2008IB2690 A 20080717 (PCT Application)
Priority: GB 200713880 A 20070717
Original IPC: A61K-39/385(B,I,H,US,20060101,20100923,A,F)
A61K-39/385(B,I,M,98,20060101,20100923,C)
A61P-31/00(B,I,M,98,20060101,20100923,C)
A61P-31/12(B,I,H,US,20060101,20100923,A,L)
A61P-37/00(B,I,H,US,20060101,20100923,A,L)
A61P-37/00(B,I,M,98,20060101,20100923,C)
C07K-1/00(B,I,M,98,20060101,20100923,C)
C07K-1/14(B,I,H,US,20060101,20100923,A,L)
Current IPC: A61K-39/385(B,I,H,US,20060101,20100923,A,F)
A61K-39/385(B,I,M,98,20060101,20100923,C)
A61P-31/00(B,I,M,98,20060101,20100923,C)
A61P-31/12(B,I,H,US,20060101,20100923,A,L)
A61P-37/00(B,I,H,US,20060101,20100923,A,L)
A61P-37/00(B,I,M,98,20060101,20100923,C)
C07K-1/00(B,I,M,98,20060101,20100923,C)
C07K-1/14(B,I,H,US,20060101,20100923,A,L)
Current ECLA class: A61K-39/09A A61K-47/48R2 A61K-47/48R2D A61K-47/48R2F A61K-47/48R2V C07K-1/16
Current ECLA ICO class: K61K-39:60P10
Current US Class (main): 424-193100
Current US Class (secondary): 530-351000 530-399000 530-413000
Original US Class (main): 424193.1
Original US Class (secondary): 530413 530351 530399
Original Abstract: This application relates to methods for the purification of saccharide antigen-carrier protein conjugates. In particular, the invention provides a method for purifying saccharide antigen- carrier protein conjugates from free carrier protein, such as CRM1 97, using hydroxyapatite. The invention further relates to methods of preparing vaccines, using this method.
Claim:
1.
1. A method of purifying saccharide antigen-carrier protein conjugates from a mixture comprising free carrier protein and

saccharide antigen-carrier protein conjugates, comprising contacting said mixture with hydroxyapatite such that the carrier protein binds to the hydroxyapatite while the conjugates do not bind; and collecting the free saccharide antigen-carrier protein conjugates.

WIPO
Publication No. WO 2009010877 A2 (Update 200914 B)
Publication Date: 20090122
**CONJUGATE PURIFICATION
PURIFICATION DE CONJUGUES**
Assignee: ~(only US)~ BIGIO, Massimo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ AVERANI, Giovanni, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ NORELLI, Francesco, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BERTI, Francesco, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BELLUCCI, Cinzia, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basel, CH Residence: CH Nationality: CH (NOVS)
Inventor: AVERANI, Giovanni, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
BELLUCCI, Cinzia, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
BERTI, Francesco, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
BIGIO, Massimo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
NORELLI, Francesco, Novartis Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (54 pages, 8 drawings)
Application: WO 2008IB2690 A 20080717 (Local application)
Priority: GB 200713880 A 20070717
Designated States: (National Original) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: C12N(99,20060101,S)
Current IPC: C12N(99,20060101,S)
Current ECLA class: A61K-39/09A A61K-47/48R2 A61K-47/48R2D A61K-47/48R2F A61K-47/48R2V C07K-1/16
Current ECLA ICO class: K61K-39:60P10
Original Abstract: This application relates to methods for the purification of saccharide antigen-carrier protein conjugates. In particular, the invention provides a method for purifying saccharide antigen- carrier protein conjugates from free carrier protein, such as CRM1 97, using hydroxyapatite. The invention further relates to methods of preparing vaccines, using this method.
L'invention concerne des procedes de purification de conjugues antigene saccharidique-proteine de support. L'invention concerne en particulier un procede de purification des conjugues antigene saccharidique-proteine de support d'une proteine de support libre, par

exemple CRM1 97, a l'aide d'hydroxyapatite. L'invention concerne egalement des methodes de preparation de vaccins a l'aide dudit procede.

Publication No. WO 2009010877 A3 (Update 200976 E)
Publication Date: 20091119
CONJUGATE PURIFICATION
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: AVERANI G, IT
BELLUCCI C, IT
BERTI F, IT
BIGIO M, IT
NORELLI F, IT
Language: EN
Application: WO 2008IB2690 A 20080717 (Local application)
Priority: GB 200713880 A 20070717
Designated States: (National Original) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-39/09(B,I,H,EP,20060101,A,L)
A61K-39/09(B,I,M,98,20060101,C) A61K-47/48(B,I,H,EP,20060101,A,F)
A61K-47/48(B,I,M,98,20060101,C) A61P-31/00(B,I,M,98,20060101,C)
A61P-31/04(B,I,H,EP,20060101,A,L) B01D-15/00(B,I,H,EP,20060101,A,L)
B01D-15/00(B,I,M,98,20060101,C) B01J-20/04(B,I,H,EP,20060101,A,L)
B01J-20/04(B,I,M,98,20060101,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20091119,A,L)
A61K-39/09(B,I,H,EP,20090101,20091119,C,L)
A61K-47/48(B,I,H,EP,20060101,20091119,A,F)
A61K-47/48(B,I,H,EP,20090101,20091119,C,F)
A61P-31/00(B,I,H,EP,20090101,20091119,C,L)
A61P-31/04(B,I,H,EP,20060101,20091119,A,L)
B01D-15/00(B,I,H,EP,20060101,20091119,A,L)
B01D-15/00(B,I,H,EP,20090101,20091119,C,L)
B01J-20/04(B,I,H,EP,20060101,20091119,A,L)
B01J-20/04(B,I,H,EP,20090101,20091119,C,L)
Current ECLA ICO class: K61K-39:60P10
Original Abstract: This application relates to methods for the purification of saccharide antigen-carrier protein conjugates. In particular, the invention provides a method for purifying saccharide antigen- carrier protein conjugates from free carrier protein, such as CRM1 97, using hydroxyapatite. The invention further relates to methods of preparing vaccines, using this method.

10/7/8 (Item 8 from file: 351)
DIALOG(R)File 351:Derwent WPI

0018544858
WPI ACC NO: 2009-A43254/200902
XRAM Acc No: C2009-020226
New kit comprises conjugates of Haemophilus influenzae type B (Hib) and ****Neisseria**** ****meningitidis**** ****capsular**** saccharides, useful for preparing a vaccine for raising an immune response against meningitis
Patent Assignee: NOVARTIS AG (NOVS); CONTORNI M (CONT-I); COSTANTINO P (COST-I)
Inventor: CONTORNI M; COSTANTINO P

Patent Family (9 patents, 122 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2008149238	A2	20081211	WO 2008IB2121	A	20080604	200902	B
WO 2008149238	A3	20090806	WO 2008IB2121	A	20080604	200952	E
AU 2008259423	A1	20081211	AU 2008259423	A	20080604	201002	E
EP 2152302	A2	20100217	EP 2008789070	A	20080604	201014	E
			WO 2008IB2121	A	20080604		
CA 2688268	A1	20081211	CA 2688268	A	20080604	201020	E
			WO 2008IB2121	A	20080604		
			CA 2688268	A	20091125		
CN 101678094	A	20100324	CN 200880001850??	A	20080604	201024	E
			WO 2008IB2121	A	20080604		
MX 2009013112	A1	20100131	WO 2008IB2121	A	20080604	201028	E
			MX 2009013112	A	20091202		
US 20100203137	A1	20100812	US 2007933235	P	20070604	201053	E
			WO 2008IB2121	A	20080604		
			US 2010451831	A	20100325		
JP 2010529103	W	20100826	WO 2008IB2121	A	20080604	201056	E
			JP 2010510910	A	20080604		

Priority Applications (no., kind, date): US 2007933235 P 20070604; US 2010451831 A 20100325

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2008149238	A2	EN	28	0	

National Designated States,Original: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

WO 2008149238	A3	EN			

National Designated States,Original: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA

AU 2008259423	A1	EN	Based on OPI patent WO 2008149238
EP 2152302	A2	EN	PCT Application WO 2008IB2121
			Based on OPI patent WO 2008149238

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

CA 2688268	A1	EN	PCT Application WO 2008IB2121
			PCT national entry CA 2688268
			Based on OPI patent WO 2008149238
CN 101678094	A	ZH	PCT Application WO 2008IB2121
			Based on OPI patent WO 2008149238
MX 2009013112	A1	ES	PCT Application WO 2008IB2121
			Based on OPI patent WO 2008149238
US 20100203137	A1	EN	Related to Provisional US 2007933235
			PCT Application WO 2008IB2121
JP 2010529103	W	JA 33	PCT Application WO 2008IB2121
			Based on OPI patent WO 2008149238

Alerting Abstract WO A2

NOVELTY - A kit comprising (i) an aqueous component, comprising a conjugate of a Hib ****capsular**** saccharide, and (ii) a lyophilized component, comprising a conjugate of a ~N. ****meningitidis**** ~ ****capsular**** saccharide, is new.

DESCRIPTION - INDEPENDENT CLAIMS are: (1) a method for preparing a combined vaccine by combining (i) an aqueous component, comprising a conjugate of a ~H. influenzae ~ type B (Hib) ****capsular**** saccharide, and (ii) a lyophilized component, comprising a conjugate of a ~N. ****meningitidis**** ~ ****capsular**** saccharide; (2) a combined vaccine comprising (i) a conjugate of a ~H. influenzae ~ type B ****capsular**** saccharide, and (ii) a conjugate of a ~N. ****meningitidis**** ~ ****capsular**** saccharide, prepared by combining an aqueous ~H. influenzae ~ conjugate and a lyophilized ~N. ****meningitidis**** ~ conjugate; (3) a vaccine comprising conjugates of ****capsular**** saccharides from two or more ~N. ****meningitidis**** ~ serogroups and from Hib, in an oil-in-water emulsion; (4) a kit, for preparing a vaccine, comprising (i) an oil-in-water emulsion component and (ii) a lyophilized component, comprising conjugated ****capsular**** saccharides from more than one serogroup of ~N. ****meningitidis**** ~ ; (5) a method for preparing a vaccine by combining (i) an oil-in-water emulsion component; and (ii) a lyophilized component comprising conjugates of ****capsular**** saccharides from more than one serogroup of ~N. ****meningitidis**** ~ ; (6) a vaccine comprising conjugates of ~N. ****meningitidis**** ~ ****capsular**** saccharides in an oil-in-water emulsion, prepared by combining an oil-in-water emulsion component and lyophilized conjugates of ****capsular**** saccharides from more than one serogroup of ~N. ****meningitidis**** ~ ; and (7) a method of raising an immune response in a patient by administering to the patient any of the vaccine above.

ACTIVITY - Immunostimulant; Neuroprotective. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The kit is useful for preparing a vaccine. The vaccine is useful for raising an immune response against meningitis (all claimed).

ADVANTAGE - The present invention provides improved vaccine formulations for Hib and meningococcal conjugates.

Technology Focus

BIOTECHNOLOGY - Preferred Kit/Vaccine/Method: The aqueous component includes an adjuvant or is unadjuvanted. The ~H. influenzae ~ conjugate is adsorbed to aluminum phosphate. Administration of the ~H. influenzae ~ conjugate results in an anti-polyribosylribitol phosphate (PRP) antibody concentration in a patient of ^> 0.15mu g/ml. The concentration of ~H. influenzae ~ conjugate in the aqueous component is 0.5-50mu g/ml. The ~H. influenzae ~ saccharide is conjugated to a carrier protein selected from CRM197, tetanus toxoid, and the outer membrane complex of ~N. ****meningitidis**** ~ . The aqueous component comprises one or more of: a diphtheria toxoid, a tetanus toxoid, acellular pertussis antigen(s), inactivated poliovirus antigen(s), hepatitis B virus surface antigen, and/or pneumococcal saccharide. Administration of the ~N. ****meningitidis**** ~ conjugate(s) results in a bactericidal antibody response. The lyophilized component includes 2, 3, or 4 of meningococcal serogroups A, C, W135 and Y. The quantity of meningococcal ****capsular**** saccharide per serogroup is 1-20mu g. The ~N. ****meningitidis**** ~ saccharide(s) is/are conjugated to a carrier protein selected from CRM197, diphtheria toxoid and tetanus toxoid. The lyophilized component includes ****capsular**** includes a stabilizer. The lyophilized component does not include a Hib saccharide. The vaccine includes one or more buffers. The vaccine comprises one or more of: a diphtheria toxoid, a tetanus toxoid, acellular pertussis antigen(s), inactivated poliovirus antigen(s), hepatitis B virus surface antigen, and/or pneumococcal saccharide.

Title Terms/Index Terms/Additional Words: NEW; KIT; COMPRISE; CONJUGATE; HAEMOPHILUS; INFLUENZAE; TYPE; ****NEISSERIA****; ****MENINGITIDIS****; CAPSULE; USEFUL; PREPARATION; VACCINE; RAISE; IMMUNE; RESPOND; MENINGITIS

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version

A61K-0039/095	A	I	F	B	20060101
A61K-0039/095	A	I	L	B	20060101
A61K-0039/102	A	I	F	B	20060101
A61K-0039/102	A	I	L	B	20060101
A61K-0039/116	A	I	L	B	20060101
A61K-0039/295	A	I	L	B	20060101
A61K-0039/39	A	I	L	B	20060101
A61K-0047/48	A	I	L	B	20060101
A61K-0009/107	A	I	F	B	20060101
A61K-0009/107	A	I	L	B	20060101
A61K-0009/19	A	I	L	B	20060101
A61P-0031/04	A	I	L	B	20060101
A61K-0039/095	C	I	F	B	20090101
A61K-0039/095	C	I		B	20060101
A61K-0039/102	C	I	L	B	20090101
A61K-0039/102	C	I		B	20060101
A61K-0039/116	C	I		B	20060101
A61K-0039/295	C	I	L	B	20100101
A61K-0039/39	C	I		B	20060101
A61K-0047/48	C	I	L	B	20090101
A61K-0009/107	C	I	F	B	20100101
A61K-0009/107	C	I	L	B	20090101
A61K-0009/19	C	I	L	B	20090101
A61P-0031/00	C	I		B	20060101
C12N	S				20060101

ECLA: A61K-039/095, A61K-039/102, A61K-039/116, A61K-047/48R2V
ICO: K61K-039:545
US Classification, Current Main: 424-484000; Secondary: 424-201100
US Classification, Issued: 424484, 424201.1

JP Classification

FI Term	Facet	Rank	Type
A61K-039/102		A	main
A61K-039/095		B	secondary
A61K-039/116		B	secondary
A61K-039/39		B	secondary
A61P-031/04		B	secondary
A61K-039/095			
A61K-039/102			
A61K-039/116			
A61K-039/39			
A61P-031/04			

F-Term Theme + Figure	View Point	Additional Code
4C085		
4C201		
4C085	AA03	
4C085	AA04	
4C085	AA38	
4C085	BA16	
4C085	BA18	
4C085	EE03	
4C085	EE06	
4C085	FF01	

4C085 FF19
4C085 GG01

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B04-B04C1; B04-C02F; B04-N03; B14-A01; B14-G01; B14-N16; B14-S11B1; D05-H07

Original Publication Data by Authority

Australia
Publication No. AU 2008259423 A1 (Update 201002 E)
Publication Date: 20081211
Assignee: NOVARTIS AG (NOVS)
Inventor: CONTORNI M
COSTANTINO P
Language: EN
Application: AU 2008259423 A 20080604 (Local application)
Priority: US 2007933235 P 20070604
Related Publication: WO 2008149238 A (Based on OPI patent)
Original IPC: A61K-39/095(B,I,H,EP,20060101,20090806,A,F)
A61K-39/102(B,I,H,EP,20060101,20090806,A,L)
A61K-47/48(B,I,H,EP,20060101,20090806,A,L)
A61K-9/107(B,I,H,EP,20060101,20090806,A,L)
A61K-9/19(B,I,H,EP,20060101,20090806,A,L)
Current IPC: A61K-39/095(B,I,H,EP,20060101,20090806,A,F)
A61K-39/102(B,I,H,EP,20060101,20090806,A,L)
A61K-47/48(B,I,H,EP,20060101,20090806,A,L)
A61K-9/107(B,I,H,EP,20060101,20090806,A,L)
A61K-9/19(B,I,H,EP,20060101,20090806,A,L)
Current ECLA class: A61K-39/095 A61K-39/102 A61K-39/116 A61K-47/48R2V
Current ECLA ICO class: K61K-39:545

Canada
Publication No. CA 2688268 A1 (Update 201020 E)
Publication Date: 20081211
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: CONTORNI M, IT
COSTANTINO P, IT
Language: EN
Application: CA 2688268 A 20080604 (Local application)
WO 2008IB2121 A 20080604 (PCT Application)
CA 2688268 A 20091125 (PCT national entry)
Priority: US 2007933235 P 20070604
Related Publication: WO 2008149238 A (Based on OPI patent)
Original IPC: A61K-39/095(B,I,H,EP,20060101,20090806,A,F)
A61K-39/095(B,I,M,98,20060101,20090806,C)
A61K-39/102(B,I,H,EP,20060101,20090806,A,L)
A61K-39/102(B,I,M,98,20060101,20090806,C)
A61K-47/48(B,I,H,EP,20060101,20090806,A,L)
A61K-47/48(B,I,M,98,20060101,20090806,C)
A61K-9/107(B,I,H,EP,20060101,20090806,A,L)
A61K-9/107(B,I,M,98,20060101,20090806,C)
A61K-9/19(B,I,H,EP,20060101,20090806,A,L)
A61K-9/19(B,I,M,98,20060101,20090806,C)
Current IPC: A61K-39/095(B,I,H,EP,20060101,20090806,A,F)
A61K-39/095(B,I,H,EP,20090101,20090806,C,F)
A61K-39/102(B,I,H,EP,20060101,20090806,A,L)
A61K-39/102(B,I,H,EP,20090101,20090806,C,L)
A61K-47/48(B,I,H,EP,20060101,20090806,A,L)

A61K-47/48(B,I,H,EP,20090101,20090806,C,L)
A61K-9/107(B,I,H,EP,20060101,20090806,A,L)
A61K-9/107(B,I,H,EP,20090101,20090806,C,L)
A61K-9/19(B,I,H,EP,20060101,20090806,A,L)
A61K-9/19(B,I,H,EP,20090101,20090806,C,L)
Current ECLA class: A61K-39/095 A61K-39/102 A61K-39/116 A61K-47/48R2V
Current ECLA ICO class: K61K-39:545

China
Publication No. CN 101678094 A (Update 201024 E)
Publication Date: 20100324
Formulation of meningitis vaccines
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: CONTORNI M, CH
CONTORNI MARIO, CH
COSTANTINO P, CH
COSTANTINO PAOLO, CH
Language: ZH
Application: CN 200880018507 A 20080604 (Local application)
WO 2008IB2121 A 20080604 (PCT Application)
Priority: US 2007933235 P 20070604
Related Publication: WO 2008149238 A (Based on OPI patent)
Original IPC: A61K-39/095(I,CN,20060101,A,F) A61K-39/095(I,M,98,20060101,C)
A61K-39/102(I,CN,20060101,A,L) A61K-39/102(I,M,98,20060101,C)
A61K-47/48(I,CN,20060101,A,L) A61K-47/48(I,M,98,20060101,C)
A61K-9/107(I,CN,20060101,A,L) A61K-9/107(I,M,98,20060101,C)
A61K-9/19(I,CN,20060101,A,L) A61K-9/19(I,M,98,20060101,C)
Current IPC: A61K-39/095(B,I,H,CN,20060101,20100325,A,F)
A61K-39/095(B,I,H,CN,20100101,20100325,C,F)
A61K-39/102(B,I,H,CN,20060101,20100325,A,L)
A61K-39/102(B,I,H,CN,20100101,20100325,C,L)
A61K-47/48(B,I,H,CN,20060101,20100325,A,L)
A61K-47/48(B,I,H,CN,20100101,20100325,C,L)
A61K-9/107(B,I,H,CN,20060101,20100325,A,L)
A61K-9/107(B,I,H,CN,20100101,20100325,C,L)
A61K-9/19(B,I,H,CN,20060101,20100325,A,L)
A61K-9/19(B,I,H,CN,20100101,20100325,C,L)
Current ECLA class: A61K-39/095 A61K-39/102 A61K-39/116 A61K-47/48R2V
Current ECLA ICO class: K61K-39:545
Original Abstract: A liquid Hib component is utilized to reconstitute a lyophilised meningococcal component, thereby producing a combined meningitis vaccine. A lyophilised meningococcal component can also be reconstituted with an oil-in-water emulsion.
Claim: [CLAIM 1] A kit, comprising: (i) an aqueous component, comprising a conjugate of a Haemophilus influenzae type B capsular saccharide; and (ii) a lyophilised component, comprising a conjugate of a Neisseria meningitidis capsular saccharide.
[CLAIM 2] A method for preparing a combined vaccine, comprising the step of combining (i) an aqueous component, comprising a conjugate of a Haemophilus influenzae type B capsular saccharide, and (ii) a lyophilised component, comprising a conjugate of a Neisseria meningitidis capsular saccharide.
[CLAIM 3] A combined vaccine, comprising: (i) a conjugate of a Haemophilus influenzae type B capsular saccharide; and (ii) a conjugate of a Neisseria meningitidis capsular saccharide, prepared by combining an aqueous H.influenzae conjugate and a lyophilised N. meningitidis conjugate.
[CLAIM 4] The kit, method or vaccine according to any one of above claims, wherein the aqueous component includes an adjuvant.
[CLAIM 5] The kit, method or vaccine according to any one of above claims, wherein the H.influenzae conjugate is adsorbed to aluminium phosphate.

[CLAIM 6] The kit, method or vaccine of any one of claims 1 to 3, wherein the aqueous component is unadjuvanted.
[CLAIM 7] A vaccine comprising conjugates of capsular saccharides from two or more Neisseria meningitidis serogroups and from Haemophilus influenzae type B, in an oil-in-water emulsion.
[CLAIM 8] The kit, method or vaccine according to any one of above claims, wherein administration of the H.influenzae conjugate results in an anti-PRP antibody concentration in a patient of more than 0.15 micrograms/ml.
[CLAIM 9] The kit, method or vaccine according to any one of above claims, wherein the concentration of H.influenzae conjugate in the aqueous component is in the range of 0.5 micrograms/ml to 50 micrograms/ml.
[CLAIM 10] The kit, method or vaccine according to any one of above claims, wherein the H.influenzae saccharide is conjugated to a carrier protein selected from the group consisting of CRM1 97, tetanus toxoid, and the outer membrane complex of N. meningitidis.
[CLAIM 11] The kit or method according to any one of above claims, wherein the aqueous component comprises one or more of: a diphtheria toxoid, a tetanus toxoid, acellular pertussis antigen(s), inactivated polioviras antigen(s), hepatitis B vims surface antigen, and/or pneumococcal saccharide.
[CLAIM 12] A kit for preparing a vaccine, the kit comprising: (i) an oil-in-water emulsion component; and (ii) a lyophilised component, comprising conjugated capsular saccharides from more than one serogroup of Neisseria meningitidis.
[CLAIM 13] A method for preparing a vaccine, comprising the step of combining: (i) an oil-in-water emulsion component; and (ii) a lyophilised component comprising conjugates of capsular saccharides from more than one serogroup of Neisseria meningitidis.
[CLAIM 14] A vaccine comprising conjugates of Neisseria meningitidis capsular saccharides in an oil-in-water emulsion, prepared by combining an oil-in-water emulsion component and lyophilised conjugates of capsular saccharides from more than one serogroup of N meningitidis.
[CLAIM 15] The kit, method or vaccine according to any one of above claims, wherein administration of the N. meningitidis conjugate(s) results in a bactericidal antibody response.
[CLAIM 16] The kit, method or vaccine according to any one of above claims, wherein the lyophilised component includes 2, 3, or 4 of meningococcal serogroups A, C, W135 and Y.
[CLAIM 17] The kit, method or vaccine of claim 16, wherein the lyophilised component includes capsular saccharides from each of meningococcal serogroups A, C, W135 and Y.
[CLAIM 18] The kit, method or vaccine of claim 17, wherein the quantity of meningococcal capsular saccharide per serogroup is between 1 micrograms and 20 micrograms.
[CLAIM 19] The kit, method or vaccine according to any one of above claims, wherein the N. meningitidis saccharide(s) is/are conjugated to a carrier protein selected from the group consisting of CRM1 97, diphtheria toxoid and tetanus toxoid.
[CLAIM 20] The kit, method or vaccine of claim 16, wherein the lyophilised component includes capsular includes a stabiliser.
[CLAIM 21] The kit, method or vaccine according to any one of above claims, wherein the lyophilised component includes an adjuvant.
[CLAIM 22] The kit, method or vaccine of any one of claims 1 to 20, wherein the lyophilised component includes no adjuvant.
[CLAIM 23] The kit, method or vaccine according to any one of above claims, wherein the lyophilised component does not include a Hib saccharide.
[CLAIM 24] The vaccine according to any one of above claims, including one or more buffers.
[CLAIM 25] The vaccine according to any one of above claims, wherein the

vaccine comprises one or more of: a diphtheria toxoid, a tetanus toxoid, acellular pertussis antigen(s), inactivated poliovirus antigen(s), hepatitis B virus surface antigen, and/or pneumococcal saccharide.

[CLAIM 26] A method of raising an immune response in a patient, comprising the step of administering to the patient a vaccine according to any one of above claims.

EPO
Publication No. EP 2152302 A2 (Update 201014 E)
Publication Date: 20100217
**FORMULIERUNG EINES IMPFSTOFFES GEGEN MENINGITIS
FORMULATION OF MENINGITIS VACCINES
FORMULATION DE VACCINS CONTRE LA MENINGITE**
Assignee: Novartis AG, Lichtstrasse 35, 4056 Basel, CH (NOVS)
Inventor: COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
CONTORNI, Mario, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2008789070 A 20080604 (Local application)
WO 2008IB2121 A 20080604 (PCT Application)
Priority: US 2007933235 P 20070604
Related Publication: WO 2008149238 A (Based on OPI patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Original IPC: A61K-39/095(B,I,H,EP,20060101,20091217,A,F)
A61K-39/095(B,I,M,98,20060101,20091217,C)
A61K-39/102(B,I,H,EP,20060101,20091217,A,L)
A61K-39/102(B,I,M,98,20060101,20091217,C)
A61K-47/48(B,I,H,EP,20060101,20091217,A,L)
A61K-47/48(B,I,M,98,20060101,20091217,C)
A61K-9/107(B,I,H,EP,20060101,20091217,A,L)
A61K-9/107(B,I,M,98,20060101,20091217,C)
A61K-9/19(B,I,H,EP,20060101,20091217,A,L)
A61K-9/19(B,I,M,98,20060101,20091217,C)
Current IPC: A61K-39/095(B,I,H,EP,20060101,20091217,A,F)
A61K-39/095(B,I,H,EP,20100101,20091217,C,F)
A61K-39/102(B,I,H,EP,20060101,20091217,A,L)
A61K-39/102(B,I,H,EP,20100101,20091217,C,L)
A61K-47/48(B,I,H,EP,20060101,20091217,A,L)
A61K-47/48(B,I,H,EP,20100101,20091217,C,L)
A61K-9/107(B,I,H,EP,20060101,20091217,A,L)
A61K-9/107(B,I,H,EP,20100101,20091217,C,L)
A61K-9/19(B,I,H,EP,20060101,20091217,A,L)
A61K-9/19(B,I,H,EP,20100101,20091217,C,L)
Current ECLA ICO class: K61K-39:545
Original Abstract: A liquid Hib component is used to reconstitute a lyophilised meningococcal component, thereby producing a combined meningitis vaccine. A lyophilised meningococcal component can also be reconstituted with an oil-in-water emulsion.

Japan
Publication No. JP 2010529103 W (Update 201056 E)
Publication Date: 20100826
Language: JA (33 pages)
Application: JP 2010510910 A 20080604 (Local application)
WO 2008IB2121 A 20080604 (PCT Application)
Priority: US 2007933235 P 20070604
Related Publication: WO 2008149238 A (Based on OPI patent)
Original IPC: A61K-39/095(B,I,H,JP,20060101,20100730,A,L)

A61K-39/095(B,I,M,98,20060101,20100730,C)
A61K-39/102(B,I,H,JP,20060101,20100730,A,F)
A61K-39/102(B,I,M,98,20060101,20100730,C)
A61K-39/116(B,I,H,JP,20060101,20100730,A,L)
A61K-39/116(B,I,M,98,20060101,20100730,C)
A61K-39/39(B,I,H,JP,20060101,20100730,A,L)
A61K-39/39(B,I,M,98,20060101,20100730,C)
A61P-31/00(B,I,M,98,20060101,20100730,C)
A61P-31/04(B,I,H,JP,20060101,20100730,A,L)
Current IPC: A61K-39/095(B,I,H,JP,20060101,20100730,A,L)
A61K-39/095(B,I,M,98,20060101,20100730,C)
A61K-39/102(B,I,H,JP,20060101,20100730,A,F)
A61K-39/102(B,I,M,98,20060101,20100730,C)
A61K-39/116(B,I,H,JP,20060101,20100730,A,L)
A61K-39/116(B,I,M,98,20060101,20100730,C)
A61K-39/39(B,I,H,JP,20060101,20100730,A,L)
A61K-39/39(B,I,M,98,20060101,20100730,C)
A61P-31/00(B,I,M,98,20060101,20100730,C)
A61P-31/04(B,I,H,JP,20060101,20100730,A,L)
Current ECLA class: A61K-39/095 A61K-39/102 A61K-39/116 A61K-47/48R2V
Current ECLA ICO class: K61K-39:545
Current JP FI-Terms: A61K-39/102 (main, A) A61K-39/095 (secondary, B)
A61K-39/116 (secondary, B) A61K-39/39 (secondary, B) A61P-31/04
(secondary, B) A61K-39/095 A61K-39/102 A61K-39/116 A61K-39/39
A61P-31/04
Current JP F-Terms: 4C085 4C201 4C085AA03 4C085AA04 4C085AA38 4C085BA16
4C085BA18 4C085EE03 4C085EE06 4C085FF01 4C085FF19 4C085GG01

Mexico
Publication No. MX 2009013112 A1 (Update 201028 E)
Publication Date: 20100131
Assignee: NOVARTIS AG (NOVS)
Inventor: CONTORNI M
COSTANTINO P
Language: ES
Application: MX 200913112 A 20091202 (Local application)
WO 2008IB2121 A 20080604 (PCT Application)
Priority: US 2007933235 P 20070604
Related Publication: WO 2008149238 A (Based on OPI patent)
Original IPC: A61K-39/095(I,MX,20060101,A,F) A61K-39/095(I,M,98,20060101,C)
A61K-9/107(I,MX,20060101,A,L) A61K-9/107(I,M,98,20060101,C)
A61K-9/19(I,MX,20060101,A,L) A61K-9/19(I,M,98,20060101,C)
Current IPC: A61K-39/095(B,I,H,MX,20100101,20060101,C,F)
A61K-9/107(B,I,H,MX,20100101,20060101,C,L)
A61K-9/19(B,I,H,MX,20100101,20060101,C,L)
Current ECLA class: A61K-39/095 A61K-39/102 A61K-39/116 A61K-47/48R2V
Current ECLA ICO class: K61K-39:545

United States
Publication No. US 20100203137 A1 (Update 201053 E)
Publication Date: 20100812
FORMULATION OF MENINGITIS VACCINES
Assignee: Contorni, Mario, Siena, IT Residence: IT (CONT-I)
Costantino, Paolo, Colle Val d'Elsa, IT Residence: IT (COST-I)
Inventor: CONTORNI M, IT
Costantino, Paolo, Colle Val d'Elsa, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY-
X100B, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2010451831 A 20100325 (Local application)
WO 2008IB2121 A 20080604 (PCT Application)
US 2007933235 P 20070604 (Related to Provisional)

Original IPC: A61K-39/295(B,I,H,US,20060101,20100812,A,L)
A61K-39/295(B,I,M,98,20060101,20100812,C)
A61K-9/107(B,I,H,US,20060101,20100812,A,F)
A61K-9/107(B,I,M,98,20060101,20100812,C)
Current IPC: A61K-39/295(B,I,H,US,20060101,20100812,A,L)
A61K-39/295(B,I,H,US,20100101,20100812,C,L)
A61K-9/107(B,I,H,US,20060101,20100812,A,F)
A61K-9/107(B,I,H,US,20100101,20100812,C,F)
Current ECLA class: A61K-39/095 A61K-39/102 A61K-39/116 A61K-47/48R2V
Current ECLA ICO class: K61K-39:545
Current US Class (main): 424-484000
Current US Class (secondary): 424-201100
Original US Class (main): 424484
Original US Class (secondary): 424201.1
Original Abstract: A liquid Hib component is used to reconstitute a lyophilised meningococcal component, thereby producing a combined meningitis vaccine. A lyophilised meningococcal component can also be reconstituted with an oil-in-water emulsion.
Claim:
1.
1. A kit comprising: (i) an aqueous component, comprising a conjugate of a ~Haemophilus influenzae~ type B capsular saccharide; and (ii) a lyophilised component, comprising a conjugate of a ~Neisseria meningitidis~ capsular saccharide.

WIPO
Publication No. WO 2008149238 A2 (Update 200902 B)
Publication Date: 20081211
**FORMULATION OF MENINGITIS VACCINES
FORMULATION DE VACCINS CONTRE LA MENINGITE**
Assignee: ~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basel, CH Residence: CH Nationality: CH (NOVS)
~(only US)~ CONTORNI, Mario, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: COSTANTINO, Paolo, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
CONTORNI, Mario, Novartis Vaccines, Via Fiorentina 1, I-53100 Siena, IT
Agent: MARSHALL, Cameron, John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (28 pages, 0 drawings)
Application: WO 2008IB2121 A 20080604 (Local application)
Priority: US 2007933235 P 20070604
Designated States: (National Original) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: C12N(99,20060101,S)
Current IPC: C12N(99,20060101,S)
Current ECLA ICO class: K61K-39:545
Original Abstract: A liquid Hib component is used to reconstitute a lyophilised meningococcal component, thereby producing a combined meningitis vaccine. A lyophilised meningococcal component can also be reconstituted with an oil-in-water emulsion.
Un composant liquide Hib est utilise pour reconstituer un composant a meningocoques lyophilise, afin de produire un vaccin combine contre la

meningite. Le composant a meningocoques lyophilise peut aussi etre reconstitue a l'aide d'une emulsion huile dans l'eau.

Publication No. WO 2008149238 A3 (Update 200952 E)
Publication Date: 20090806
FORMULATION OF MENINGITIS VACCINES
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: CONTORNI M, IT
COSTANTINO P, IT
Language: EN
Application: WO 2008IB2121 A 20080604 (Local application)
Priority: US 2007933235 P 20070604
Designated States: (National Original) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MT NL NO PL PT RO SE SI SK TR OA BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW EA
Original IPC: A61K-39/095(B,I,H,EP,20060101,A,F)
A61K-39/095(B,I,M,98,20060101,C) A61K-39/102(B,I,H,EP,20060101,A,L)
A61K-39/102(B,I,M,98,20060101,C) A61K-47/48(B,I,H,EP,20060101,A,L)
A61K-47/48(B,I,M,98,20060101,C) A61K-9/107(B,I,H,EP,20060101,A,L)
A61K-9/107(B,I,M,98,20060101,C) A61K-9/19(B,I,H,EP,20060101,A,L)
A61K-9/19(B,I,M,98,20060101,C)
Current IPC: A61K-39/095(B,I,H,EP,20060101,20090806,A,F)
A61K-39/095(B,I,H,EP,20090101,20090806,C,F)
A61K-39/102(B,I,H,EP,20060101,20090806,A,L)
A61K-39/102(B,I,H,EP,20090101,20090806,C,L)
A61K-47/48(B,I,H,EP,20060101,20090806,A,L)
A61K-47/48(B,I,H,EP,20090101,20090806,C,L)
A61K-9/107(B,I,H,EP,20060101,20090806,A,L)
A61K-9/107(B,I,H,EP,20090101,20090806,C,L)
A61K-9/19(B,I,H,EP,20060101,20090806,A,L)
A61K-9/19(B,I,H,EP,20090101,20090806,C,L)
Current ECLA ICO class: K61K-39:545
Original Abstract: A liquid Hib component is used to reconstitute a lyophilised meningococcal component, thereby producing a combined meningitis vaccine. A lyophilised meningococcal component can also be reconstituted with an oil-in-water emulsion.

10/7/9 (Item 9 from file: 351)
DIALOG(R)File 351:Derwent WPI

0018017019 - Drawing available
WPI ACC NO: 2008-J37344/200854
XRAM Acc No: C2008-304663
Novel modified ****capsular**** saccharide, useful as medicament for preventing or treating disease e.g. bacterial meningitis caused by capsulate bacteria
Patent Assignee: NOVARTIS AG (NOVS); BARDOTTI A (BARD-I); BERTI F (BERT-I); COSTANTINO P (COST-I); PIANIGIANI A (PIAN-I)
Inventor: BARDOTTI A; BERTI F; COSTANTINO P; PIANIGIANI A
Patent Family (9 patents, 122 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 2008084411	A2	20080717	WO 2008IB1116	A	20080111	200854 B
WO 2008084411	A3	20081224				200903 E

AU 2008204259	A1	20080717	AU 2008204259	A	20080111	200954	E
CA 2674228	A1	20080717	CA 2674228	A	20080111	200974	E
			WO 2008IB1116	A	20080111		
			CA 2674228	A	20090630		
EP 2118145	A2	20091118	EP 2008737594	A	20080111	200976	E
			WO 2008IB1116	A	20080111		
CN 101583629	A	20091118	CN 200880002201	A	20080111	200978	E
			WO 2008IB1116	A	20080111		
MX 2009007415	A1	20090930	WO 2008IB1116	A	20080111	201007	E
			MX 2009007415	A	20090709		
JP 2010515718	W	20100513	WO 2008IB1116	A	20080111	201032	E
			JP 2009545256	A	20080111		
US 20100322958	A1	20101223	WO 2008IB1116	A	20080111	201101	E
			US 2009448709	A	20091106		

Priority Applications (no., kind, date): GB 2007562 A 20070111

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2008084411	A2	EN	84	9	

National Designated States,Original: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

WO 2008084411	A3	EN						

National Designated States,Original: AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2008204259	A1	EN	Based on OPI patent	WO 2008084411
CA 2674228	A1	EN	PCT Application	WO 2008IB1116
			PCT national entry	CA 2674228
			Based on OPI patent	WO 2008084411
EP 2118145	A2	EN	PCT Application	WO 2008IB1116
			Based on OPI patent	WO 2008084411

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

CN 101583629	A	ZH		PCT Application	WO 2008IB1116
				Based on OPI patent	WO 2008084411
MX 2009007415	A1	ES		PCT Application	WO 2008IB1116
				Based on OPI patent	WO 2008084411
JP 2010515718	W	JA	74	PCT Application	WO 2008IB1116
				Based on OPI patent	WO 2008084411
US 20100322958	A1	EN		PCT Application	WO 2008IB1116

Alerting Abstract WO A2

NOVELTY - A modified ****capsular**** saccharide, comprising a blocking group at a hydroxyl group position on monosaccharide units of the corresponding native ****capsular**** saccharide, is new.

DESCRIPTION - A modified ****capsular**** saccharide comprising a blocking group at a hydroxyl group position on monosaccharide units of the corresponding native ****capsular**** saccharide, where the blocking group

is of formula: -O-X-Y (Ia), -O-R 1 (Ib), is new.

X= C(O), S(O) or SO 2 ;

Y= NR 1 R 2 or R 3 ;

R 1 = 1-6C alkyl substituted with hydroxyl, sulfhydryl and amine;

R 2 = H or 1-6C alkyl;and

R 3 = 1-6C alkyl.

INDEPENDENT CLAIMS are included for the following: (1) saccharide of formula (I); (2) modifying a ****capsular**** saccharide, involves providing ****capsular**** saccharide having hydroxyl group on a monosaccharide unit, and converting the hydroxyl group into a blocking group; (3) modifying ~N.****meningitidis**** ~ serogroup A ****polysaccharide****, involves (a) providing a native ~N.****meningitidis**** ~ serogroup A ****polysaccharide****, depolymerizing and sizing the ****polysaccharide**** to provide an oligosaccharide, and converting at least one hydroxyl group of the oligosaccharide into a blocking group, or (b) providing a native ~N.****meningitidis**** ~ serogroup A ****polysaccharide****, converting hydroxyl group of ****polysaccharide**** into a blocking group, and depolymerizing and sizing the resulting ****polysaccharide****; (4) preparing the modified ****capsular**** saccharide is a total synthesis process; (5) modified ****capsular**** saccharide obtained by the above method; (6) saccharide-protein conjugate of a modified saccharide; (7) making a saccharide-protein conjugate, involves (a) providing a modified ****capsular**** saccharide, and conjugating the modified ****capsular**** saccharide to a protein through the terminal anomeric hydroxyl group or the amino group derived from a terminal anomeric hydroxyl group, or (b) providing a modified ****capsular**** saccharide, converting the pairs of vicinal hydroxyl groups into aldehyde groups by oxidative cleavage, and linking the modified ****capsular**** saccharide to a protein by reductive amination; (8) saccharide-protein conjugate of modified saccharide obtained by above method; (9) molecule comprising a saccharide moiety of formula (I); and (10) pharmaceutical composition comprising a modified saccharide and/or saccharide-protein conjugate and/or molecule, and a carrier.

In formula (I), T= group of formulae (A) or (B), or In formula (I) contained in the molecule, T=group of formulae (C) or (D);

n= 1-100, preferably 15-25;

Z= OH, OAc or blocking group;

Q= OH, OAc or blocking group;

V= -NH 2 , -NHE, -NE 1 E 2 , W 2 , or -O-D;

E,E 1 ,E 2 = nitrogen protecting groups, which may be same or different;

D= oxygen protecting group;

W,W 1 ,W 2 = -OH or blocking group;

Z,Q=	OH or blocking groups of formula -O-X-Y' (IIa) or -O-R 4 (IIb);
L=	O, NH, NE, S or Se;
Y'=	NR 2 R 4 ;
R 2 =	H or 1-6C alkyl;and
R 4 =	1-4C alkylene-CH(O) or -1-5C alkylene-NH-.

ACTIVITY - Antibacterial; Neuroprotective. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The modified saccharide, conjugate or molecule is useful as a medicament for preventing or treating a disease caused by one or more capsulate bacteria. The disease is bacterial meningitis (all claimed).

ADVANTAGE - The modified ****capsular**** saccharide has improved stability to hydrolysis.

Technology Focus

BIOTECHNOLOGY - Preparation (claimed): The modified ****capsular**** saccharide is produced by total synthesis process, by forming glycosidic linkages between two or more monosaccharide units. Preferred Components: The saccharide comprises blocking group of formula (Ia). The ratio of blocking groups in the saccharide is 90:10. At least 10% of the monosaccharide units of the saccharide have blocking groups. The monosaccharide units of the saccharide have blocking groups. The corresponding native ****capsular**** saccharide comprises monosaccharide units linked by phosphodiester bonds. The corresponding native ****capsular**** saccharide is ~****Neisseria**** meningitides ~ serogroup A saccharide. The blocking group is 4- and/or 3-positions of the corresponding ~N.****meningitidis**** ~ serogroup A saccharide. The blocking group is 4-positions of the corresponding ~N.****meningitidis**** ~ serogroup A saccharide. The modified ****capsular**** saccharide is an oligosaccharide. The modified saccharide comprises a terminal anomeric hydroxyl group or an amino group derived from a terminal anomeric hydroxyl group. The monosaccharide unit of the modified ****capsular**** saccharide, where two vicinal hydroxyl groups of the corresponding native ****capsular**** saccharide do not comprise blocking groups. The monosaccharide units of the saccharide comprise blocking groups, where R 1 is substituted with two vicinal hydroxyl groups. At least 1% of the Q groups are blocking groups. The blocking group is -OC(O)NR 1 R 2 . Preferred Method: The converting step involves reacting the ****capsular**** saccharide with a bifunctional reagent in an organic solvent, and reacting the product of reacting step with an amino compound of formula: HNR 1 R 2 . The blocking group is -OC(O)R 3 and reacting the ****capsular**** saccharide with [R 3 C(O)] 2 O in the presence of an imidazole catalyst. The ****capsular**** saccharide is ****capsular**** oligosaccharide. The ****capsular**** oligosaccharide is obtained by depolymerizing and sizing the corresponding native ****capsular**** ****polysaccharide****. The ****capsular**** saccharide in the providing step is a native ****capsular********polysaccharide**** and the method

further involves in which the product of converting step is sized, thus providing a modified ****capsular**** oligosaccharide. The vicinal hydroxyl groups present in the blocking groups are converted into aldehyde groups in converting step. The conditions for oxidative cleavage are proportion of the vicinal hydroxyl groups present in the blocking groups are converted into aldehyde groups in converting step. Preferred Conjugate: The protein is bacterial toxin or toxoid. The bacterial toxin or toxoid is diphtheria toxin or toxoid. The bacterial toxin or toxoid is CRM 1 9 7 . Preferred Composition: The pharmaceutical composition further comprises saccharide antigen from one or more of serogroups C/W135 and Y of ~N. ****meningitidis*** ~ , the saccharide optionally being an oligosaccharide and optionally being conjugated to a carrier protein. The composition further comprises a vaccine adjuvant. The adjuvant is an aluminum phosphate. The composition is a vaccine against a disease caused by ~N. ****meningitidis ~ ****.

Title Terms/Index Terms/Additional Words: NOVEL; MODIFIED; CAPSULE; SACCHARIDE; USEFUL; MEDICAMENT; PREVENT; TREAT; DISEASE; BACTERIA; MENINGITIS; CAUSE

Class Codes
International Classification (+ Attributes)

IPC + Level Value Position Status Version
A61K-0031/70 A I L B 20060101
A61K-0031/7024 A I L B 20060101
A61K-0031/715 A I L B 20060101
A61K-0038/16 A I L B 20060101
A61K-0039/02 A I L B 20060101
A61K-0039/095 A I L B 20060101
A61K-0039/095 A I F B 20060101
A61K-0039/385 A I L B 20060101
A61K-0039/39 A I L B 20060101
A61K-0047/48 A I L B 20060101
A61P-0031/04 A I L B 20060101
A61P-0037/04 A I L B 20060101
C07H-0011/00 A I L B 20060101
C07H-0011/04 A I F B 20060101
C07H-0011/04 A I L B 20060101
C07H-0013/02 A I L B 20060101
C07H-0013/12 A I L B 20060101
C07H-0015/04 A I L B 20060101
C07H-0005/06 A I L B 20060101
C07K-0014/00 A I L B 20060101
C07K-0014/195 A I L B 20060101
C07K-0014/34 A I L B 20060101
C08B-0037/00 A I F B 20060101
C08B-0037/00 A I L B 20060101
A61K-0031/70 C I B 20060101
A61K-0031/7024 C I B 20060101
A61K-0031/715 C I B 20060101
A61K-0038/16 C I B 20060101
A61K-0039/02 C I L B 20090101
A61K-0039/095 C I L B 20100101
A61K-0039/095 C I B 20060101
A61K-0039/385 C I B 20060101
A61K-0039/39 C I L B 20100101
A61K-0047/48 C I L B 20090101
A61P-0031/00 C I L B 20100101
A61P-0031/00 C I B 20060101
A61P-0037/00 C I B 20060101
C07H-0011/00 C I F B 20100101
C07H-0011/00 C I B 20060101

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  C07H-0013/00  C  I     B  20060101
  C07H-0015/00  C  I     B  20060101
  C07H-0005/00  C  I     B  20060101
  C07K-0014/00  C  I     B  20060101
  C07K-0014/195  C  I     B  20060101
  C08B-0037/00  C  I  F  B  20090101
  C08B-0037/00  C  I  L  B  20100101
  C13K  S           20060101
ECLA: A61K-039/095, A61K-047/48R2V, C07H-013/00, C08B-037/00, C08B-037/00P
ICO:  K61K-039:555A, K61K-039:60P10
US Classification, Current Main: 424-193100; Secondary: 424-184100,
424-250100, 514-001100, 514-023000, 514-054000, 530-404000, 530-405000,
530-406000, 530-408000, 530-409000, 530-411000, 536-018700, 536-053000,
536-054000, 536-117000, 536-118000, 536-119000, 536-120000
US Classification, Issued: 424193.1, 536118, 536119, 53653, 53654, 536120,
  536117, 53618.7, 530408, 530409, 530411, 530404, 530405, 530406, 51423,
  424250.1, 424184.1, 5141.1, 51454

JP Classification
  FI Term           Facet Rank Type
C07H-011/04           CSP  A  main
A61K-039/095               B  secondary
A61K-039/39                B  secondary
A61P-031/04                B  secondary
C08B-037/00         P      B  secondary
C07H-011/04           CSP
A61K-039/095
A61K-039/39
A61P-031/04
C08B-037/00         P

F-Term  View Point  Additional
 Theme   + Figure   Code
 4C057
 4C085
 4C090
 4C201
 4C085     AA03
 4C090     AA05
 4C090     AA09
 4C057     AA17
 4C057     AA20
 4C085     AA38
 4C085     BA16
 4C090     BA94
 4C090     BA97
 4C057     BB02
 4C090     BB64
 4C090     BB92
 4C090     BC25
 4C090     BD41
 4C090     CA35
 4C057     CC03
 4C090     DA23
 4C057     DD03
 4C085     DD11
 4C085     DD59
 4C085     DD86
 4C085     EE06
 4C085     FF01
 4C085     FF13
 4C057     GG03
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4C085 GG04
4C085 GG05
4C085 GG08
4C085 GG10

File Segment: CPI
DWPI Class: B03; B04
Manual Codes (CPI/A-M): B04-C02; B05-B02A3; B14-A01; B14-N16; B14-S11; N05-D
Original Publication Data by Authority

Australia
Publication No. AU 2008204259 A1 (Update 200954 E)
Publication Date: 20080717
Assignee: NOVARTIS AG (NOVS)
Inventor: BARDOTTI A
BERTI F
COSTANTINO P
Language: EN
Application: AU 2008204259 A 20080111 (Local application)
Priority: GB 2007562 A 20070111
Related Publication: WO 2008084411 A (Based on OPI patent)
Original IPC: A61K-39/02(B,I,H,EP,20060101,20081224,A,L)
A61K-47/48(B,I,H,EP,20060101,20081224,A,L)
C08B-37/00(B,I,H,EP,20060101,20081224,A,F)
Current IPC: A61K-39/02(B,I,H,EP,20060101,20081224,A,L)
A61K-39/02(B,I,H,EP,20060101,20081224,C,L)
A61K-47/48(B,I,H,EP,20060101,20081224,A,L)
A61K-47/48(B,I,H,EP,20060101,20081224,C,L)
C08B-37/00(B,I,H,EP,20060101,20081224,A,F)
C08B-37/00(B,I,H,EP,20060101,20081224,C,F)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07H-13/00 C08B-37/00 C08B-37/00P
Current ECLA ICO class: K61K-39:555A K61K-39:60P10

Canada
Publication No. CA 2674228 A1 (Update 200974 E)
Publication Date: 20080717
Assignee: NOVARTIS AG; CH (NOVS)
Inventor: BARDOTTI A, IT
BERTI F, IT
COSTANTINO P, IT
Language: EN
Application: CA 2674228 A 20080111 (Local application)
WO 2008IB1116 A 20080111 (PCT Application)
CA 2674228 A 20090630 (PCT national entry)
Priority: GB 2007562 A 20070111
Related Publication: WO 2008084411 A (Based on OPI patent)
Original IPC: A61K-39/02(B,I,H,EP,20060101,20081224,A,L)
A61K-39/02(B,I,M,98,20060101,20081224,C)
A61K-47/48(B,I,H,EP,20060101,20081224,A,L)
A61K-47/48(B,I,M,98,20060101,20081224,C)
C08B-37/00(B,I,H,EP,20060101,20081224,A,F)
C08B-37/00(B,I,M,98,20060101,20081224,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,20081224,A,L)
A61K-39/02(B,I,H,EP,20060101,20081224,C,L)
A61K-47/48(B,I,H,EP,20060101,20081224,A,L)
A61K-47/48(B,I,H,EP,20060101,20081224,C,L)
C08B-37/00(B,I,H,EP,20060101,20081224,A,F)
C08B-37/00(B,I,H,EP,20060101,20081224,C,F)

Current ECLA class: A61K-39/095 A61K-47/48R2V C07H-13/00 C08B-37/00 C08B-37/00P
Current ECLA ICO class: K61K-39:555A K61K-39:60P10

China
Publication No. CN 101583629 A (Update 200978 E)
Publication Date: 20091118
Modified saccharides
Assignee: NOVARTIS AG; CH (NOVS)
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Current IPC: A61K-39/02(B,I,H,CN,20060101,20091118,A,L) A61K-39/02(B,I,H,CN,20090101,20091118,C,L) A61K-47/48(B,I,H,CN,20060101,20091118,A,L) A61K-47/48(B,I,H,CN,20090101,20091118,C,L) C08B-37/00(B,I,H,CN,20060101,20091118,A,F) C08B-37/00(B,I,H,CN,20090101,20091118,C,F)
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Original Abstract: Modified capsular saccharides comprising a blocking group at a hydroxyl group position on at least one of the monosaccharide units of the corresponding native capsular saccharide, wherein the blocking group is of the formula (Ia) or (Ib), -OX-Y (Ia) or -O-R1 (Ib), wherein X is C(O), S(O) or SO2; Y is NR1R2 or R3; R1 is C1-6 alkyl substituted with 1, 2 or 3 groups independently selected from hydroxyl, sulphydryl and amine; R2 is H or C1-6 alkyl; and R3 is C1-6 alkyl; processes for modifying a capsular saccharide with the blocking groups; saccharide-protein conjugates comprising the modified capsular saccharide; processes for making the saccharide-protein conjugates, pharmaceutical compositions comprising the modified capsular saccharides and/or saccharide-protein conjugates; and methods and uses of the same.
Claim: [CLAIM 1] A modified capsular saccharide comprising a blocking group at a hydroxyl group position on at least one of the monosaccharide units of the corresponding native capsular saccharide, wherein the blocking group is of the formula (Ia) or (Ib), -O-X-Y (Ia) -O-R1 (Ib), wherein X is C(O), S(O) or SO2; Y is NR'R2 or R3; R1 is C1-6 alkyl substituted with 1, 2 or 3 groups independently selected from hydroxyl, sulphydryl and amine; R2 is H or C6 alkyl; R3 is C1-6 alkyl.
[CLAIM 2] The modified capsular saccharide according to claim 1, wherein the blocking group is of formula (Ia).
[CLAIM 3] The modified capsular saccharide according to claim 2, wherein X is C(O).
[CLAIM 4] The modified capsular saccharide according to claim 2 or claim 3, wherein Y is NR1R2.
[CLAIM 5] The modified capsular saccharide according to claim 4, wherein R2 is H.
[CLAIM 6] The modified capsular saccharide according to claim 4 or claim 5, wherein R1 is substituted with 1, 2 or 3 hydroxyl groups.

[CLAIM 7] The modified capsular saccharide according to any one of claims 4 to 6, wherein R1 is substituted with a single group, this substitution being at the distal'end of the C1-6 alkyl chain.
[CLAIM 8] The modified capsular saccharide according to any one of claims 4 to 6, wherein R1 is substituted with two vicinal groups.
[CLAIM 9] The modified capsular saccharide according to any one of claims 4 to 8, wherein the saccharide comprises a) at least one blocking group, wherein R1 is substituted with a single group, this substitution being at the distal end of the C1-6 alkyl chain and b) at least one blocking group, wherein R1 is substituted with two vicinal groups.
[CLAIM 10] The modified capsular saccharide according to claim 9, wherein the ratio of blocking groups, wherein R1 is substituted with a single group to blocking groups, wherein R1 is substituted with two vicinal groups is 90: 10.
[CLAIM 11] The modified capsular saccharide according to claim 2 or claim 3, wherein Y is R3.
[CLAIM 12] The modified capsular saccharide according to claim 11, wherein R3 is CH3.
[CLAIM 13] The modified capsular saccharide according to any one of the preceding claims, wherein at least 10% of the monosaccharide units of the saccharide have blocking groups.
[CLAIM 14] The modified capsular saccharide according to any one of the preceding claims, wherein all the monosaccharide units of the saccharide have blocking groups.
[CLAIM 15] The modified capsular saccharide according to any one of the preceding claims, wherein the corresponding native capsular saccharide comprises monosaccharide units linked by phosphodiester bonds.
[CLAIM 16] The modified capsular saccharide according to claim 15, wherein the corresponding native capsular saccharide is a Neisseria meningitidis serogroup A saccharide.
[CLAIM 17] The modified capsular saccharide according to claim 16, wherein the blocking group is at any of the 4- and/or 3-positions of the corresponding Neisseria meningitidis serogroup A saccharide.
[CLAIM 18] The modified capsular saccharide according to claim 17, wherein the blocking group is at any of the 4-positions of the corresponding Neisseria meningitidis serogroup A saccharide.
[CLAIM 19] The modified capsular saccharide according to any one of the preceding claims, wherein the modified capsular saccharide is an oligosaccharide.
[CLAIM 20] The modified capsular saccharide according to any one of the preceding claims, wherein the modified saccharide comprises a terminal anomeric hydroxyl group or an amino group derived from a terminal anomeric hydroxyl group.
[CLAIM 21] The modified capsular saccharide according to any one of claims 1 to 19, wherein there is at least one monosaccharide unit of the modified capsular saccharide where two vicinal hydroxyl groups of the corresponding native capsular saccharide do not comprise blocking groups.
[CLAIM 22] The modified capsular saccharide according to any one of claims 1 to 19, wherein at least one of the monosaccharide units of the saccharide comprise blocking groups, wherein R1 is substituted with two vicinal hydroxyl groups.
[CLAIM 23] A saccharide of the formula, FORMULA, wherein T is of the formula (A) or (B), FORMULA (A), FORMULA (B), n is an integer from 1 to 100; each Z group is independently selected from OH, OAc or a blocking group as defined in claims 1 to 8 or 11 to 12; and each Q group is independently selected from OH, OAc or a blocking group as defined in claims 1 to 8 or 11 to 12; V is selected from -NH2, -NHE, -NE1E2, W2, or -O-D, where: E, E1 and E2 are nitrogen protecting groups, which may be the same or different, and D is an oxygen protecting group; W is selected from -OH or a blocking group as defined in any one of claims 1 to 8 or 11 to 12; W1is selected from -OH or a blocking group as defined

in any one of claims 1 to 8 or 11 to 12; W2 is selected from -OH or a blocking group as defined in any one of claims 1 to 8 or 11 to 12; and wherein at least one of the Z groups and/or at least one of the Q groups are blocking groups as defined in claims 1 to 8 or 11 to 12.

[CLAIM 24] The saccharide according to claim 23, wherein at least 10% of the Z groups are blocking groups.

[CLAIM 25] The saccharide according to claim 23 or claim 24, wherein n is an integer from 15 to 25.

[CLAIM 26] The saccharide according to any one of claims 23 to 25, wherein at least 1% of the Q groups are blocking groups.

[CLAIM 27] A process for modifying a capsular saccharide comprising the steps of: (a) providing a capsular saccharide having at least one hydroxyl group on a monosaccharide unit; and (b) converting said at least one hydroxyl group into a blocking group as defined in claims 1 to 8 or 11 to 12.

[CLAIM 28] The process according to claim 27, wherein the blocking group is -OC(O)NR1R2 and step (b) comprises the steps of: (b1) reacting the capsular saccharide with a bifunctional reagent in an organic solvent; and (b2) reacting the product of step (b2) with an amino compound of formula (I), HNR1R2 (I), wherein R1 and R2 are as defined in any of claims 1 to 8.

[CLAIM 29] The process according to claim 27, wherein the blocking group is -OC(O)R3 and step (b) comprises the step of (b1) reacting the capsular saccharide with [(R3C(O)]2O in the presence of an imidazole catalyst.

[CLAIM 30] The process according to claim 28 or claim 29, wherein the capsular saccharide in step (a) is a capsular oligosaccharide.

[CLAIM 31] The process according to claim 30, wherein the capsular oligosaccharide is obtainable by depolymerising and sizing the corresponding native capsular polysaccharide.

[CLAIM 32] The process of claim 30, wherein the capsular saccharide in step (a) is a native capsular polysaccharide and the process further comprises a step (c) in which the product of step (b) is sized, thereby providing a modified capsular oligosaccharide.

[CLAIM 33] A process for modifying a Neisseria meningitidis serogroup A polysaccharide comprising the steps of: (a) providing a native Neisseria meningitidis serogroup A polysaccharide; (b) depolymerising and sizing said polysaccharide to provide an oligosaccharide; and (c) converting at least one hydroxyl group of the oligosaccharide into a blocking group, in accordance with any one of claims 27 to 29.

[CLAIM 34] A process for modifying a Neisseria meningitidis serogroup A polysaccharide comprising the steps of: (a) providing a native Neisseria meningitidis serogroup A polysaccharide; (b) converting at least one hydroxyl group of the polysaccharide into a blocking group, in accordance with any one of claims 27 to 29; and (c) depolymerising and sizing the resulting polysaccharide.

[CLAIM 35] A process for preparing the modified capsular saccharide of claims 1 to 26 which is a total synthesis process comprising forming glycosidic linkages between two or more monosaccharide units.

[CLAIM 36] A modified capsular saccharide obtainable or obtained by the process according to any one of claims 27 to 35.

[CLAIM 37] A saccharide-protein conjugate of a modified saccharide according to any one of claims 1 to 26 or 36.

[CLAIM 38] The conjugate according to claim 37, wherein the protein is a bacterial toxin or toxoid.

[CLAIM 39] The conjugate according to claim 38, wherein the bacterial toxin or toxoid is diphtheria toxin or toxoid

[CLAIM 40] The conjugate according to claim 39, wherein the bacterial toxin or toxoid is CRM197.

[CLAIM 41] A process for making a saccharide-protein conjugate comprising the steps of: (c) providing a modified capsular saccharide according to claim 20; and (d) conjugating the modified capsular saccharide to a

protein via the terminal anomeric hydroxyl group or the amino group derived from a terminal anomeric hydroxyl group.

[CLAIM 42] A process for making a saccharide-protein conjugate comprising the steps of: (a) providing a modified capsular saccharide according to claim 21; (b) converting at least one of the pairs of vicinal hydroxyl groups into aldehyde groups by oxidative cleavage; and (c) linking the modified capsular saccharide to a protein by reductive amination.

[CLAIM 43] A process for making a saccharide-protein conjugate comprising the steps of: (a) providing a modified capsular saccharide according to claim 22; (b) converting at least one of the pairs of vicinal hydroxyl groups into an aldehyde groups by oxidative cleavage; and (c) linking the modified capsular saccharide to a protein by reductive amination.

[CLAIM 44] The process according to claim 43, wherein all of the vicinal hydroxyl groups present in the blocking groups are converted into aldehyde groups in step (b).

[CLAIM 45] The process according to claim 43, wherein the conditions for oxidative cleavage are selected such that only a proportion of the vicinal hydroxyl groups present in the blocking groups are converted into aldehyde groups in step (b).

[CLAIM 46] The process according to any one of claims 41 to 45, wherein the protein is as defined in any one of claims 38 to 40.

[CLAIM 47] A saccharide-protein conjugate of a modified saccharide obtainable or obtained by the process according to any one of claims 41 to 46.

[CLAIM 48] A molecule comprising a saccharide moiety of formula, FORMULA, wherein T is of the formula (A) or (B), FORMULAE, n is an integer from 1 to 100; each Z group is independently selected from OH or a blocking group as defined in claims 1 o 8 or 11 to 12; and each Q group is independently selected from OH or a blocking group as defined in claims 1 o 8 or 11 to 12; W is selected from OH or a blocking group as defined in claims 1 to 8 or 11 to 12; L is O, NH, NE, S or Se, wherein the free covalent bond of L is joined to a protein carrier; and wherein the protein carrier is as defined in any one of claims 38 to 40, and wherein at least one of the Z groups and/or at least one of the Q groups are blocking groups as defined in claims 1 to 8 or 11 to 12.

[CLAIM 49] A molecule comprising a saccharide of the formula, FORMULA, wherein T is of the formula (A) or (B), FORMULAE, n, Z, Q, W, W and V are as defined in claim 23, and at least one of the Z groups and/or at least one of the Q groups are of the formula -O-X-Y'(IIa), -O-R4 (IIb), wherein X is C(O), S(O) or SO2; Y'is NR2R4; R2 is H or C1-6alkyl; and R4 is -C1-4 alkylene-CH(O) or -C1-5 alkylene-NH-, wherein the -NH- group is part of a protein carrier; and wherein the protein carrier is a protein defined in any one of claims 38 to 40.

[CLAIM 50] A pharmaceutical composition comprising (a) a modified saccharide according to any one of claims 1 to 26 or 36 and/or a saccharide-protein conjugate according to any one of claims 37 to 40 or 47 and/or a molecule according to claim 48 or 49, and (b) a pharmaceutically acceptable carrier.

[CLAIM 51] The composition according to claim 50, further comprising a saccharide antigen from one or more of serogroups C, W135 and Y of N. meningitidis, the saccharide optionally being an oligosaccharide and optionally being conjugated to a carrier protein.

[CLAIM 52] The composition according to claim 50 or claim 51, further comprising a vaccine adjuvant.

[CLAIM 53] The composition according to claim 52, wherein the adjuvant is an aluminium phosphate.

[CLAIM 54] The composition according to any one of claims 50 to 53, which is a vaccine against a disease caused by N. meningitidis.

[CLAIM 55] A method for raising an antibody response in a mammal, comprising administering the pharmaceutical composition according to any one of claims 50 to54 to the mammal.

[CLAIM 56] The modified saccharide of any one according to claims 1 to 26

or 36; the conjugate according to any one of claims 37 to 40 or 47; or the molecule according to claim 48 or 49 for use as a medicament.

[CLAIM 57] The use of the modified polysaccharide according to any one of claims 1 to 26 or 36, or the conjugate according to any one of claims 37 to 40 or 47, or the molecule according to claim 48 or 49, in the manufacture of a medicament for preventing or treating a disease caused by one or more capsulate bacteria.

[CLAIM 58] The use according to claim 57, wherein the disease is bacterial meningitis.

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**MODIFIZIERTE SACCHARIDE
MODIFIED SACCHARIDES
SACCHARIDES MODIFIES**
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A61K-39/02(B,I,M,98,20060101,20090812,C)
A61K-47/48(B,I,H,EP,20060101,20090812,A,L)
A61K-47/48(B,I,M,98,20060101,20090812,C)
C08B-37/00(B,I,H,EP,20060101,20090812,A,F)
C08B-37/00(B,I,M,98,20060101,20090812,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,20090812,A,L)
A61K-39/02(B,I,H,EP,20090101,20090812,C,L)
A61K-47/48(B,I,H,EP,20060101,20090812,A,L)
A61K-47/48(B,I,H,EP,20090101,20090812,C,L)
C08B-37/00(B,I,H,EP,20060101,20090812,A,F)
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Current ECLA class: A61K-39/095 A61K-47/48R2V C07H-13/00 C08B-37/00 C08B-37/00P
Current ECLA ICO class: K61K-39:555A K61K-39:60P10
Original Abstract: Modified capsular saccharides comprising a blocking group at a hydroxyl group position on at least one of the monosaccharide units of the corresponding native capsular saccharide, wherein the blocking group is of the formula (Ia) or (Ib): -OX-Y (Ia) or -O-R1 (Ib) wherein X is C(O), S(O) or SO2; Y is NR1R2or R3; R1 is C1-6 alkyl substituted with 1, 2 or 3 groups independently selected from hydroxyl, sulphydryl and amine; R2 is H or C1-6 alkyl; and R3 is C1-6 alkyl; processes for modifying a capsular saccharide with the blocking groups; saccharide-protein conjugates comprising the modified capsular saccharide; processes for making the saccharide-protein conjugates, pharmaceutical compositions comprising the modified capsular saccharides and/or saccharide-protein conjugates; and methods and uses of the same.

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    A61K-39/095(B,I,M,98,20060101,20100416,C)
    A61K-39/39(B,I,H,JP,20060101,20100416,A,L)
    A61K-39/39(B,I,M,98,20060101,20100416,C)
    A61P-31/00(B,I,M,98,20060101,20100416,C)
    A61P-31/04(B,I,H,JP,20060101,20100416,A,L)
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    C07H-11/04(B,I,H,JP,20060101,20100416,A,F)
    C08B-37/00(B,I,H,JP,20060101,20100416,A,L)
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Current IPC: A61K-39/095(B,I,H,JP,20060101,20100416,A,L)
    A61K-39/095(B,I,H,JP,20100101,20100416,C,L)
    A61K-39/39(B,I,H,JP,20060101,20100416,A,L)
    A61K-39/39(B,I,H,JP,20100101,20100416,C,L)
    A61P-31/00(B,I,H,JP,20100101,20100416,C,L)
    A61P-31/04(B,I,H,JP,20060101,20100416,A,L)
    C07H-11/00(B,I,H,JP,20100101,20100416,C,F)
    C07H-11/04(B,I,H,JP,20060101,20100416,A,F)
    C08B-37/00(B,I,H,JP,20060101,20100416,A,L)
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    4C057AA17 4C057AA20 4C085AA38 4C085BA16 4C090BA94 4C090BA97 4C057BB02
    4C090BB64 4C090BB92 4C090BC25 4C090BD41 4C090CA35 4C057CC03 4C090DA23
    4C057DD03 4C085DD11 4C085DD59 4C085DD86 4C085EE06 4C085FF01 4C085FF13
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    A61K-47/48(I,MX,20060101,A,L) A61K-47/48(I,M,98,20060101,C)
    C08B-37/00(I,MX,20060101,A,F) C08B-37/00(I,M,98,20060101,C)
Current IPC: A61K-39/02(B,I,H,MX,20090101,20060101,C,L)
    A61K-47/48(B,I,H,MX,20090101,20060101,C,L)
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Current ECLA class: A61K-39/095 A61K-47/48R2V C07H-13/00 C08B-37/00
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16(B,I,H,US,20060101,20101223,A,L)
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A61P-31/04(B,I,H,US,20060101,20101223,A,L)
A61P-37/00(B,I,M,98,20060101,20101223,C)
A61P-37/04(B,I,H,US,20060101,20101223,A,L)
C07H-11/00(B,I,H,US,20060101,20101223,A,L)
C07H-11/00(B,I,M,98,20060101,20101223,C)
C07H-11/04(B,I,H,US,20060101,20101223,A,L)
C07H-13/00(B,I,M,98,20060101,20101223,C)
C07H-13/02(B,I,H,US,20060101,20101223,A,L)
C07H-13/12(B,I,H,US,20060101,20101223,A,L)
C07H-15/00(B,I,M,98,20060101,20101223,C)
C07H-15/04(B,I,H,US,20060101,20101223,A,L)
C07H-5/00(B,I,M,98,20060101,20101223,C)
C07H-5/06(B,I,H,US,20060101,20101223,A,L)
C07K-14/00(B,I,H,US,20060101,20101223,A,L)
C07K-14/00(B,I,M,98,20060101,20101223,C)
C07K-14/195(B,I,H,US,20060101,20101223,A,L)
C07K-14/195(B,I,M,98,20060101,20101223,C)
C07K-14/34(B,I,H,US,20060101,20101223,A,L)

Current US Class (main): 424-193100

Current US Class (secondary): 424-184100 424-250100 514-001100 514-023000 514-054000 530-404000 530-405000 530-406000 530-408000 530-409000 530-411000 536-018700 536-053000 536-054000 536-117000 536-118000 536-119000 536-120000

Original US Class (main): 424193.1

Original US Class (secondary): 536118 536119 53653 53654 536120 536117 53618.7 530408 530409 530411 530404 530405 530406 51423 424250.1 424184.1 5141.1 51454

Original Abstract: Modified capsular saccharides comprising a blocking group at a hydroxyl group position on at least one of the monosaccharide units of the corresponding native capsular saccharide, wherein the blocking group is of the formula (Ia) or (Ib): --OX--Y (Ia) or --O--R1 (Ib) wherein X is C(O), S(O) or SO2; Y is NR1R2 or R3; R1 is C1-6 alkyl substituted with 1, 2 or 3 groups independently selected from hydroxyl, sulphydryl and amine; R2 is H or C1-6 alkyl; and R3 is C1-6 alkyl; processes for modifying a capsular saccharide with the blocking groups; saccharide-protein conjugates comprising the modified capsular saccharide; processes for making the saccharide-protein conjugates, pharmaceutical compositions comprising the modified capsular saccharides and/or saccharide-protein conjugates; and methods and uses of the same.

Claim:

1.

1. A modified capsular saccharide comprising a blocking group at a hydroxyl group position on at least one of the monosaccharide units of the corresponding native capsular saccharide, wherein the blocking group is of the formula (Ia) or (Ib):

* --O--X--Y (Ia)

* --O-- R1 (Ib)

* wherein

  * X is C(O), S(O) or SO2;

  * Y is NR1R2 or R3;

  * R1 is C1-6 alkyl substituted with 1, 2 or 3 groups independently selected from hydroxyl, sulphydryl and amine;

* R2 is H or C1-6 alkyl;

* R3 is C1-6 alkyl.

WIPO
Publication No. WO 2008084411 A2 (Update 200854 B)
Publication Date: 20080717
**MODIFIED SACCHARIDES
SACCHARIDES MODIFIES**
Assignee: ~(except US)~ NOVARTIS AG, Lichtstrasse 35, CH-4056 Basel, CH
Residence: CH Nationality: CH (NOVS)
~(only US)~ BARDOTTI, Angela, Novartis Caccines and Diagnostics Srl, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BERTI, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ COSTANTINO, Paolo, Novartis Vaccines and Diagnostics Srl, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BARDOTTI, Angela, Novartis Caccines and Diagnostics Srl, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
BERTI, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
COSTANTINO, Paolo, Novartis Vaccines and Diagnostics Srl, Via Fiorentina 1, I-53100 Siena, IT
Agent: MARSHALL, Cameron, John et al., Carpameals Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (84 pages, 9 drawings)
Application: WO 2008IB1116 A 20080111 (Local application)
Priority: GB 2007562 A 20070111
Designated States: (National Original) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: C13K(99,20060101,S)
Current IPC: C13K(99,20060101,S)
Current ECLA class: A61K-39/095 C07H-13/00 C08B-37/00 C08B-37/00P
Current ECLA ICO class: K61K-39:555A K61K-39:60P10
Original Abstract: Modified capsular saccharides comprising a blocking group at a hydroxyl group position on at least one of the monosaccharide units of the corresponding native capsular saccharide, wherein the blocking group is of the formula (Ia) or (Ib): -OX-Y (Ia) or -0-R1 (Ib) wherein X is C(O), S(O) or SO2; Y is NR1R2or R3; R1 is C1-6 alkyl substituted with 1, 2 or 3 groups independently selected from hydroxyl, sulphydryl and amine; R2 is H or C1-6 alkyl; and R3 is C1-6 alkyl; processes for modifying a capsular saccharide with the blocking groups; saccharide-protein conjugates comprising the modified capsular saccharide; processes for making the saccharide-protein conjugates, pharmaceutical compositions comprising the modified capsular saccharides and/or saccharide-protein conjugates; and methods and uses of the same.
L'invention concerne des saccharides capsulaires modifies comprenant un groupe bloquant au niveau d'une position de groupe hydroxy sur au moins l'un des motifs monosaccharide du saccharide capsulaire natif correspondant, dans lesquels le groupe bloquant est de la formule (Ia) ou (Ib): -OX-Y (Ia) ou -0-Rl (Ib) dans lesquelles X represente C(O), S(O) ou SO2; Y represente NR1R2ou R3; Rl represente un groupe alkyle en Cl a C6 substitue par 1, 2 ou 3 groupes choisis independamment parmi le groupe hydroxy, sulfydryle et amine; R2 represente un atome H ou un groupe alkyle en Cl a C6; et R3 represente un groupe alkyle en Cl a C6; des procedes permettant de modifier un saccharide capsulaire avec les

groupes bloquants; des conjugues saccharide/proteine comprenant le saccharide capsulaire modifie; des procedes permettant de fabriquer les conjugues saccharide/proteine; des compositions pharmaceutiques comprenant des saccharides capsulaires modifies et/ou des conjugues saccharide/proteine; et des procedes d'utilisation de ces composes.

Publication No. WO 2008084411 A3 (Update 200903 E)
Publication Date: 20081224
Language: EN
Designated States: (National Original) AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: A61K-39/02(B,I,H,EP,20060101,A,L)
A61K-39/02(B,I,M,98,20060101,C) A61K-47/48(B,I,H,EP,20060101,A,L)
A61K-47/48(B,I,M,98,20060101,C) C08B-37/00(B,I,H,EP,20060101,A,F)
C08B-37/00(B,I,M,98,20060101,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,20081224,A,L)
A61K-39/02(B,I,H,EP,20060101,20081224,C,L)
A61K-47/48(B,I,H,EP,20060101,20081224,A,L)
A61K-47/48(B,I,H,EP,20060101,20081224,C,L)
C08B-37/00(B,I,H,EP,20060101,20081224,A,F)
C08B-37/00(B,I,H,EP,20060101,20081224,C,F)
Current ECLA class: A61K-39/095 C07H-13/00 C08B-37/00 C08B-37/00P
Current ECLA ICO class: K61K-39:555A K61K-39:60P10

10/7/10 (Item 10 from file: 351)
DIALOG(R)File 351:Derwent WPI

0017833268
WPI ACC NO: 2008-G53727/200841
XRAM Acc No: C2008-207379
XRPX Acc No: N2008-513921
Analyzing degree of unconjugation of a sample by contacting the sample with a basic reagent to precipitate conjugated saccharide component from sample and obtain supernatant comprising the unconjugated component
Patent Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS); NOVARTIS VACCINES&DIAGNOSTICS SRL (NOVS)
Inventor: BERTI F; COSTANTINO P; GALLETTI B; PARENTE P
Patent Family (4 patents, 119 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2007122512	A2	20071101	WO 2007IB1855	A	20070321	200841	B
WO 2007122512	A3	20080124				200841	E
EP 2005165	A2	20081224	EP 2007734937	A	20070321	200903	E
			WO 2007IB1855	A	20070321		
US 20090176311	A1	20090709	WO 2007IB1855	A	20070321	200946	E
			US 2009293130	A	20090218		

Priority Applications (no., kind, date): GB 20065757 A 20060322

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2007122512	A2	EN	33	3	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BH BR

BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM
GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY
MA MD MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD
SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES
FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL OA PL PT
RO SD SE SI SK SL SZ TR TZ UG ZM ZW
WO 2007122512 A3 EN
National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BH BR
BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM
GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY
MA MD MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD
SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES
FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL OA PL PT
RO SD SE SI SK SL SZ TR TZ UG ZM ZW
EP 2005165 A2 EN PCT Application WO 2007IB1855
Based on OPI patent WO 2007122512
Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
US 20090176311 A1 EN PCT Application WO 2007IB1855

Alerting Abstract WO A2

NOVELTY - Analyzing a sample's degree of unconjugation comprises (a) contacting the sample with a basic reagent under basic conditions to selectively precipitate the conjugated saccharide component from the sample and to obtain a supernatant comprising the separated unconjugated component, and (b) analyzing the supernatant's content to give the unconjugated content of the sample.

DESCRIPTION - INDEPENDENT CLAIMS are:

1.a method of preparing a sample for analysis of its degree of unconjugation;

2.a method of separating a conjugated saccharide component in a sample from an unconjugated component in the sample;

3.a supernatant obtained by the method above;

4.a precipitate obtained by the method above;

5.a method of releasing a vaccine for use by physicians;

6.a method for preparing a vaccine composition; and

7.a method for packaging a vaccine.

USE - The basic reagent under basic conditions used in the methods above is useful for selectively precipitating a conjugated saccharide component in a sample from an unconjugated component in the sample, thus separating the conjugated saccharide component from the unconjugated component (claimed). The methods are useful for analyzing a sample's degree of unconjugation, preparing a sample for analysis of its degree of unconjugation, and separating a conjugated saccharide component in a sample from an unconjugated component in the sample. The methods can be used for the analysis and quality control of conjugate vaccines and for monitoring the stability of a vaccine in storage.

ADVANTAGE - The invention overcomes the deficiencies in the prior art and provides a rapid and quantitative technique for separation of unconjugated and conjugated components. It is applicable to a range of conjugate vaccines, including vaccines comprising bacterial ****capsular**** saccharides containing a sialic acid residue and particularly vaccines

comprising ~Streptococcus agalactiae ~ ****capsular**** saccharide.

Technology Focus

BIOTECHNOLOGY - Preferred Method: The improved method of analyzing the degree of unconjugation of a sample comprises contacting the sample with a basic reagent under basic conditions to selectively precipitate the conjugated saccharide component from the sample. Preparing a sample for analysis of its degree of unconjugation comprises contacting the sample with a basic reagent under basic conditions to selectively precipitate the conjugated saccharide component from the sample and to obtain a supernatant comprising separated unconjugated component. The unconjugated component is an unconjugated saccharide component or an unconjugated carrier component. It also comprises measuring the sample's total saccharide content or measuring the sample's total carrier content. In the method, the basic reagent comprises a lyotropic salt, where the lyotropic salt is a sulfate, hydrogen phosphate, acetate, citrate, tartrate of ammonium, potassium, sodium, or lithium. Preferably, the lyotropic salt is a sulfate or hydrogen phosphate of ammonium or potassium. Specifically, the lyotropic salt is K 2 HPO 4 . In the method, the basic conditions are from pH 8-12. Preferably, the basic reagent comprises K 2 HPO 4 and the basic conditions are from pH 9.5-9.9. Preferably, the conjugated saccharide is a saccharide antigen conjugated to a carrier protein. The sample is a vaccine, where the vaccine is a glycoconjugate vaccine. The glycoconjugate vaccine comprises a conjugate comprising a saccharide containing a sialic acid residue. It also comprises a conjugate comprising a bacterial ****capsular**** saccharide from ~Streptococcus agalactiae ~ . Preferably, the bacterial ****capsular**** saccharide is from ~S. agalactiae ~ serogroup Ia, Ib, II, III, or V. Separating a conjugated saccharide component in a sample from an unconjugated component in the sample comprises contacting the sample with a basic reagent under basic conditions to selectively precipitate the conjugated saccharide component from the sample. The improvement comprises contacting the sample with a basic reagent under basic conditions to selectively precipitate the conjugated saccharide component from the sample. Releasing a vaccine for use by physicians comprises:

1. manufacturing a vaccine comprising a conjugated saccharide;

2. analyzing the vaccine's degree of unconjugation by the method above; and

3. if the results from (b) indicate a degree of unconjugation acceptable for clinical use, releasing the vaccine for use by physicians.

Preparing a vaccine composition comprises analyzing the vaccine's degree of unconjugation by the method above including pH measurement, followed by adjusting the pH of the composition to a desired value, e.g. 6-8, preferably 7. Packaging a vaccine comprises:

1. manufacturing a bulk vaccine containing a conjugated saccharide;

2. analyzing the degree of unconjugation of the bulk vaccine by the method above;

3. optionally, analyzing the bulk vaccine for pH and/or other properties; and

4. if the results from (b) and (c) indicate that the bulk vaccine is acceptable for clinical use, preparing and packaging the vaccine for human use from the bulk.

Title Terms/Index Terms/Additional Words: DEGREE; SAMPLE; CONTACT; BASIC;

REAGENT; PRECIPITATION; CONJUGATE; SACCHARIDE; COMPONENT; OBTAIN; SUPERNATANT; COMPRISE; UNCONJUGATED

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
A61K-0039/00 A I L B 20060101
C07H-0001/00 A I L B 20060101
G01N-0033/15 A N L 20060101
G01N-0033/50 A I F 20060101
G01N-0033/50 A I F B 20060101
A61K-0039/00 C I L B 20060101
A61K-0039/00 C I B 20060101
C07H-0001/00 C I B 20060101
G01N-0033/15 C N 20060101
G01N-0033/50 C I 20060101
G01N-0033/50 C I F B 20060101
G01N-0033/50 C I B 20060101
ICO: K61K-039:60P10
US Classification, Current Main: 436-094000; Secondary: 536-127000
US Classification, Issued: 43694, 536127

File Segment: CPI; EPI
DWPI Class: B04; D16; S03
Manual Codes (EPI/S-X): S03-E13D
Manual Codes (CPI/A-M): B04-B04C1; B04-C02F; B04-N06; B07-A02B; B11-C06; B11-C08D; B11-C08E; B12-K04A; B12-K04E3; B14-S11; D05-H07; D05-H09; D05-H13

Original Publication Data by Authority

EPO
Publication No. EP 2005165 A2 (Update 200903 E)
Publication Date: 20081224
**TRENNUNG KONJUGIERTER UND NICHTKONJUGIERTER KOMPONENTEN
SEPARATION OF CONJUGATED AND UNCONJUGATED COMPONENTS
SEPARATION DE COMPOSES CONJUGUES ET NON CONJUGUES**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT
Inventor: BERTI, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, 53100 Siena, IT
GALLETTI, Bruno, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, 53100 Siena, IT
PARENTE, Pierino, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, 53100 Siena, IT
COSTANTINO, Paolo, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, 53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2007734937 A 20070321 (Local application)
WO 2007IB1855 A 20070321 (PCT Application)
Priority: GB 20065757 A 20060322
Related Publication: WO 2007122512 A (Based on OPI patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Original IPC: A61K-39/00(B,I,H,EP,20060101,20081029,A,L)
A61K-39/00(B,I,M,98,20060101,20081029,C)
G01N-33/50(B,I,H,EP,20060101,20081029,A,F)
G01N-33/50(B,I,M,98,20060101,20081029,C)

Current IPC: A61K-39/00(B,I,H,EP,20060101,20081029,A,L)
A61K-39/00(B,I,M,98,20060101,20081029,C)
G01N-33/50(B,I,H,EP,20060101,20081029,A,F)
G01N-33/50(B,I,M,98,20060101,20081029,C)
Current ECLA ICO class: K61K-39:60P10
Original Abstract: The invention is based on the use of a basic reagent under basic conditions to separate conjugated saccharide from unconjugated components in a sample, ~e.g.~ a vaccine, by precipitation of the conjugated saccharide. The invention allows rapid and quantitative separation of conjugated and conjugated components, which may be exploited in analytical methods for quantifying unconjugated saccharide or carrier. Therefore, the separation of conjugated and unconjugated components using the invention may be advantageously combined with a quantitative saccharide or carrier analysis to provide improved quality control for conjugate vaccines.

United States
Publication No. US 20090176311 A1 (Update 200946 E)
Publication Date: 20090709
SEPARATION OF CONJUGATED AND UNCONJUGATED COMPONENTS
Assignee: NOAVARTIS VACCINES AND DIAGNOSTICS SRL, Siena, IT (NOVS)
Berti, Francesco, Siena, IT Residence: IT
Galletti, Bruno, Siena, IT Residence: IT
Parente, Pierino, Siena, IT Residence: IT
Costantino, Paolo, Siena, IT Residence: IT
Inventor: Berti, Francesco, Siena, IT Residence: IT
Costantino, Paolo, Siena, IT Residence: IT
Galletti, Bruno, Siena, IT Residence: IT
Parente, Pierino, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY R338, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2009293130 A 20090218 (Local application)
WO 2007IB1855 A 20070321 (PCT Application)
Priority: GB 20065757 A 20060322
Original IPC: C07H-1/00(B,I,H,US,20060101,20090709,A,L)
C07H-1/00(B,I,M,98,20060101,20090709,C)
G01N-33/50(B,I,H,US,20060101,20090709,A,F)
G01N-33/50(B,I,M,98,20060101,20090709,C)
Current IPC: C07H-1/00(B,I,H,US,20060101,20090709,A,L)
C07H-1/00(B,I,M,98,20060101,20090709,C)
G01N-33/50(B,I,H,US,20060101,20090709,A,F)
G01N-33/50(B,I,M,98,20060101,20090709,C)
Current ECLA ICO class: K61K-39:60P10
Current US Class (main): 436-094000
Current US Class (secondary): 536-127000
Original US Class (main): 43694
Original US Class (secondary): 536127
Original Abstract: The invention is based on the use of a basic reagent under basic conditions to separate conjugated saccharide from unconjugated components in a sample, e.g. a vaccine, by precipitation of the conjugated saccharide. The invention allows rapid and quantitative separation of conjugated and conjugated components, which may be exploited in analytical methods for quantifying unconjugated saccharide or carrier. Therefore, the separation of conjugated and unconjugated components using the invention may be advantageously combined with a quantitative saccharide or carrier analysis to provide improved quality control for conjugate vaccines.
Claim:
1.
1. A method of analysing a sample's degree of unconjugation, comprising the steps of (i) contacting the sample with a basic

reagent under basic conditions to selectively precipitate the conjugated saccharide component from the sample and thereby to obtain a supernatant comprising the separated unconjugated component and (ii) analysing the supernatant's content to give the unconjugated content of the sample.

WIPO
Publication No. WO 2007122512 A2 (Update 200841 B)
Publication Date: 20071101
**SEPARATION OF CONJUGATED AND UNCONJUGATED COMPONENTS
SEPARATION DE COMPOSES CONJUGUES ET NON CONJUGUES**
Assignee: ~(except US)~ NOVARTIS VACCINES AND DIAGNOSTICS SRL, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT (NOVS)
~(only US)~ BERTI, Francesco, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ GALLETTI, Bruno, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ PARENTE, Pierino, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ COSTANTINO, Paolo, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BERTI, Francesco, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
GALLETTI, Bruno, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
PARENTE, Pierino, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
COSTANTINO, Paolo, c/o Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (33 pages, 3 drawings)
Application: WO 2007IB1855 A 20070321 (Local application)
Priority: GB 20065757 A 20060322
Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: G01N-33/15(N,99,20060101,A,L) G01N-33/15(N,M,98,20060101,C) G01N-33/50(I,99,20060101,A,F) G01N-33/50(I,99,20060101,A,F) G01N-33/50(I,M,98,20060101,C)
Current IPC: G01N-33/15(N,99,20060101,A,L) G01N-33/15(N,M,98,20060101,C) G01N-33/50(I,99,20060101,A,F) G01N-33/50(I,99,20060101,A,F) G01N-33/50(I,M,98,20060101,C)
Current ECLA ICO class: K61K-39:60P10
Original Abstract: The invention is based on the use of a basic reagent under basic conditions to separate conjugated saccharide from unconjugated components in a sample, ~e.g.~ a vaccine, by precipitation of the conjugated saccharide. The invention allows rapid and quantitative separation of conjugated and conjugated components, which may be exploited in analytical methods for quantifying unconjugated saccharide or carrier. Therefore, the separation of conjugated and unconjugated components using the invention may be advantageously combined with a quantitative saccharide or carrier analysis to provide

improved quality control for conjugate vaccines.
L'invention porte sur l'utilisation de reactifs basiques dans des conditions basiques pour separer des saccharides conjugues de saccharides non conjugues dans un echantillon, par exemple dans un vaccin, par precipitation du saccharide conjugue. L'invention permet une separation quantitative et rapide des composants conjugues d'avec les non conjugues, laquelle peut servir dans des methodes analytiques pour quantifier le saccharide non conjugues ou le vecteur. Ainsi, la separation de composants conjugues ou non conjugues peut se combiner avantageusement avec une analyse quantitative du saccharide ou du vecteur pour obtenir un controle de qualite ameliore des vaccins conjugues.

Publication No. WO 2007122512 A3 (Update 200841 E)
Publication Date: 20080124
Language: EN
Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: A61K-39/00(B,I,H,EP,20060101,A,L)
A61K-39/00(B,I,M,98,20060101,C) G01N-33/50(B,I,H,EP,20060101,A,F)
G01N-33/50(B,I,M,98,20060101,C)
Current IPC: A61K-39/00(B,I,H,EP,20060101,20080124,A,L)
A61K-39/00(B,I,H,EP,20060101,20080124,C,L)
G01N-33/50(B,I,H,EP,20060101,20080124,A,F)
G01N-33/50(B,I,H,EP,20060101,20080124,C,F)
Current ECLA ICO class: K61K-39:60P10

10/7/11 (Item 11 from file: 351)
DIALOG(R)File 351:Derwent WPI

0016568709
WPI ACC NO: 2007-283647/200727
XRAM Acc No: C2007-104024
Modifying bacterial ****capsular**** saccharide antigen comprises converting a neutral group in the saccharide into a cationic group, and/or converting a neutral group in the saccharide into an anionic group
Patent Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: BERTI F; TELFORD J; WACK A
Patent Family (5 patents, 116 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2007023386	A2	20070301	WO 2006IB2833	A	20060824	200727	B
EP 1937304	A2	20080702	EP 2006831540	A	20060824	200845	E
			WO 2006IB2833	A	20060824		
AU 2006283302	A1	20070301	AU 2006283302	A	20060824	200857	E
CA 2620416	A1	20070301	CA 2620416	A	20060824	200917	E
			WO 2006IB2833	A	20060824		
			CA 2620416	A	20080225		
US 20090136547	A1	20090528	WO 2006IB2833	A	20060824	200935	E
			US 200864663	A	20080825		

Priority Applications (no., kind, date): GB 200517353 A 20050824; GB 20067738 A 20060419

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2007023386	A2	EN	56	35	
National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW					
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
EP 1937304	A2	EN			PCT Application WO 2006IB2833 Based on OPI patent WO 2007023386
Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR					
AU 2006283302	A1	EN			Based on OPI patent WO 2007023386
CA 2620416	A1	EN			PCT Application WO 2006IB2833 PCT national entry CA 2620416 Based on OPI patent WO 2007023386
US 20090136547	A1	EN			PCT Application WO 2006IB2833

Alerting Abstract WO A2

NOVELTY - Modifying a bacterial ****capsular**** saccharide antigen comprises: (a) if the saccharide is anionic, converting a neutral group in the saccharide into a cationic group; (b) if the saccharide is cationic, converting a neutral group in the saccharide into an anionic group; (c) if the saccharide is neutral, converting a first neutral group in the saccharide into an anionic group and converting a second neutral group in the saccharide into a cationic group, thus providing a modified saccharide.

DESCRIPTION - INDEPENDENT CLAIMS are:

1. a modified bacterial ****capsular**** saccharide, where the saccharide in its natural form includes repeating units that are cationic, but the saccharide in its modified form includes repeating units that are zwitterionic or anionic;

2. a modified bacterial ****capsular**** saccharide, where the saccharide in its natural form includes repeating units that are anionic, but the saccharide in its modified form includes repeating units that are zwitterionic or cationic;

3. a modified bacterial ****capsular**** saccharide, where the saccharide in its natural form includes repeating units that include either cationic or anionic groups, but the saccharide in its modified form includes repeating units that include both cationic and anionic groups; and

4. a modified bacterial ****capsular**** saccharide, where the saccharide includes a repeating unit that (a) includes both positively-charged and negatively-charged groups but (b) has no overall charge.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The method is useful for modifying a bacterial ****capsular**** saccharide antigen. The modified saccharide antigen can be used as active ingredients in compositions, e.g. vaccine, for the prevention and/or treatment of a bacterial infection, including diseases caused by ~S. agalactiae ~ , e.g. neonatal sepsis or bacteremia, neonatal pneumonia, neonatal meningitis, endometritis, osteomyelitis, or septic arthritis.

Technology Focus

BIOTECHNOLOGY - Preferred Modified Saccharide: The repeating units in the modified saccharide are zwitterionic. It has both a free carboxyl group and a free amino group. Preferably, the saccharide is from group B streptococcus or meningococcus. However, the bacterial ****capsular**** saccharide is not from ~Bacillus fragilis ~ or ~Streptococcus pneumoniae ~ . A neutral group is converted to a group with a lower pKb value. An N-acetyl group is converted to an amino or amine group. Positive and negative charges are present on different monosaccharide within a repeating unit, where the positive and negative charges are not on adjacent monosaccharides within the repeating unit. At least 50% of the saccharide's repeating units are zwitterionic repeating units. The saccharide is a substantially full-length ****capsular********polysaccharide****. Preferred Method: In modifying a bacterial ****capsular**** saccharide antigen, deacetylating an N-acetyl group on the bacterial ****capsular**** saccharide in the presence of a base or enzyme to provide a free amino group. It further comprises reacting the free amino group with an aldehyde to provide an amine group, where the aldehyde is formaldehyde and the amine is a secondary amine. The N-acetyl group is present on a NeuAc moiety and/or a GlcNac moiety. The method also comprises reacting a carboxyl group on the bacterial ****capsular**** saccharide with pyruvate. It further comprises reacting the pyruvate with a carbodiimide or acetic acid. The method also comprises reacting a carboxyl group on the bacterial ****capsular**** saccharide with TEMPO (2,2,6,6-tetramethyl-1-piperidine oxoammonium ion) in the presence of hypochlorite and bromide. It also comprises hydrolysis of a terminal galactose unit on the bacterial ****capsular**** saccharide with O 3 /NO or beta-endogalactosidase. It also comprises oxidizing the terminal galactose unit with galactose oxidase to provide an aldehyde group the method also comprises reacting the aldehyde group with a free amino group or an amine group. It further comprises oxidizing NeuAc groups on the bacterial ****capsular**** saccharide to provide aldehyde groups and then reacting the aldehyde groups with a free amino group or an amine group.

Title Terms/Index Terms/Additional Words: MODIFIED; BACTERIA; CAPSULE; SACCHARIDE; ANTIGEN; COMPRISE; CONVERT; NEUTRAL; GROUP; CATION; ANION

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
A61K-0039/02 A I L B 20060101
A61K-0039/09 A I F B 20060101
A61K-0039/095 A I L B 20060101
A61P-0031/04 A I L B 20060101
C08B-0037/00 A I L B 20060101
A61K S 20060101
A61K-0039/02 C I L B 20090101
A61K-0039/09 C I F B 20060101
A61K-0039/09 C I B 20060101
A61K-0039/095 C I L B 20090101
A61P-0031/00 C I L B 20090101
C08B-0037/00 C I L B 20060101
C08B-0037/00 C I B 20060101
ECLA: A61K-039/09A, A61K-039/095, C08B-037/00P
US Classification, Current Main: 424-244100; Secondary: 424-234100, 424-250100, 536-123100
US Classification, Issued: 424244.1, 536123.1, 424250.1, 424234.1

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B04-B04C1; B04-C02F; B14-A01; B14-C09; B14-K01; B14-N14; B14-N16; B14-S06; B14-S11B1; D05-A02; D05-H07

Original Publication Data by Authority

Australia
Publication No. AU 2006283302 A1 (Update 200857 E)
Publication Date: 20070301
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: WACK A
  BERTI F
  TELFORD J
Language: EN
Application: AU 2006283302 A 20060824 (Local application)
Priority: GB 200517353 A 20050824
  GB 20067738 A 20060419
Related Publication: WO 2007023386 A (Based on OPI patent)
Original IPC: A61K-39/09(B,I,H,EP,20060101,20070705,A,F)
    C08B-37/00(B,I,H,EP,20060101,20070705,A,L)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20070705,A,F)
    A61K-39/09(B,I,H,EP,20060101,20070705,C,F)
    C08B-37/00(B,I,H,EP,20060101,20070705,A,L)
    C08B-37/00(B,I,H,EP,20060101,20070705,C,L)
Current ECLA class: A61K-39/09A A61K-39/095

Canada
Publication No. CA 2620416 A1 (Update 200917 E)
Publication Date: 20070301
Assignee: NOVARTIS VACCINES&DIAGNOSTICS INC; IT (NOVS)
Inventor: BERTI F, IT
  TELFORD J, IT
  WACK A, IT
Language: EN
Application: CA 2620416 A 20060824 (Local application)
  WO 2006IB2833 A 20060824 (PCT Application)
  CA 2620416 A 20080225 (PCT national entry)
Priority: GB 200517353 A 20050824
  GB 20067738 A 20060419
Related Publication: WO 2007023386 A (Based on OPI patent)
Original IPC: A61K-39/09(B,I,H,EP,20060101,20070705,A,F)
    A61K-39/09(B,I,M,98,20060101,20070705,C)
    C08B-37/00(B,I,H,EP,20060101,20070705,A,L)
    C08B-37/00(B,I,M,98,20060101,20070705,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20070705,A,F)
    A61K-39/09(B,I,M,98,20060101,20070705,C)
    C08B-37/00(B,I,H,EP,20060101,20070705,A,L)
    C08B-37/00(B,I,M,98,20060101,20070705,C)
Current ECLA class: A61K-39/09A A61K-39/095 C08B-37/00P

EPO
Publication No. EP 1937304 A2 (Update 200845 E)
Publication Date: 20080702
**ZWITTERIONISATION KAPSELFORMIGER SACCHARIDE
  ZWITTERIONIZATION OF CAPSULAR SACCHARIDES
  ZWITTERIONISATION DE SACCHARIDES CAPSULAIRES**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100
    Siena (SI), IT
Inventor: TELFORD, John, Novartis Vaccines and Diagnostics S.r.l., Via
    Fiorentina, 1, I-53100 Siena, IT
  BERTI, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via
    Fiorentina, 1, I-53100 Siena, IT
  WACK, Andreas, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina,
    1, I-53100 Siena, IT

Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2006831540 A 20060824 (Local application)
  WO 2006IB2833 A 20060824 (PCT Application)
Priority: GB 200517353 A 20050824
  GB 20067738 A 20060419
Related Publication: WO 2007023386 A (Based on OPI patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Original IPC: A61K-39/09(B,I,H,EP,20060101,20080327,A,F)
    A61K-39/09(B,I,M,98,20060101,20080327,C)
    C08B-37/00(B,I,H,EP,20060101,20080327,A,L)
    C08B-37/00(B,I,M,98,20060101,20080327,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20080327,A,F)
    A61K-39/09(B,I,H,EP,20060101,20080327,C,F)
    C08B-37/00(B,I,H,EP,20060101,20080327,A,L)
    C08B-37/00(B,I,H,EP,20060101,20080327,C,L)
Current ECLA class: A61K-39/09A A61K-39/095 C08B-37/00P
Original Abstract: Capsular saccharides are typically anionic. In the invention, however, cationic groups are introduced, such that the modified saccharide has a repeating unit which includes both cationic and anionic groups. These cationic and anionic groups can be balanced to give a zwitterionic repeating unit. These modifications can convert a saccharide that is normally a T-independent antigen into one that can activate T cells without requiring conjugation to a carrier. Typically, the invention modifies an anionic bacterial capsular saccharide antigen by converting a neutral group in the saccharide into a cationic group e.g. to change -NHAc to -NH3+.

United States
Publication No. US 20090136547 A1 (Update 200935 E)
Publication Date: 20090528
ZWITTERIONIZATION OF CAPSULAR SACCHARIDES
Assignee: NOVARTIS VACCINES AND DIAGNOSTICS SRL, Siena, IT (NOVS)
  Telford, John, Siena, IT Residence: IT
  Berti, Francesco, Siena, IT Residence: IT
  Wack, Andreas, Siena, IT Residence: IT
Inventor: Berti, Francesco, Siena, IT Residence: IT
  Telford, John, Siena, IT Residence: IT
  Wack, Andreas, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY R338, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 200864663 A 20080825 (Local application)
  WO 2006IB2833 A 20060824 (PCT Application)
Priority: GB 200517353 A 20050824
  GB 20067738 A 20060419
Original IPC: A61K-39/02(B,I,H,US,20060101,20090528,A,L)
    A61K-39/02(B,I,M,98,20060101,20090528,C)
    A61K-39/09(B,I,H,US,20060101,20090528,A,F)
    A61K-39/09(B,I,M,98,20060101,20090528,C)
    A61K-39/095(B,I,H,US,20060101,20090528,A,L)
    A61K-39/095(B,I,M,98,20060101,20090528,C)
    A61P-31/00(B,I,M,98,20060101,20090528,C)
    A61P-31/04(B,I,H,US,20060101,20090528,A,L)
    C08B-37/00(B,I,H,US,20060101,20090528,A,L)
    C08B-37/00(B,I,M,98,20060101,20090528,C)
Current IPC: A61K-39/02(B,I,H,US,20060101,20090528,A,L)
    A61K-39/02(B,I,H,US,20090101,20090528,C,L)
    A61K-39/09(B,I,H,US,20060101,20090528,A,F)
    A61K-39/09(B,I,H,US,20090101,20090528,C,F)

A61K-39/095(B,I,H,US,20060101,20090528,A,L)
A61K-39/095(B,I,H,US,20090101,20090528,C,L)
A61P-31/00(B,I,H,US,20090101,20090528,C,L)
A61P-31/04(B,I,H,US,20060101,20090528,A,L)
C08B-37/00(B,I,H,US,20060101,20090528,A,L)
C08B-37/00(B,I,H,US,20090101,20090528,C,L)
Current ECLA class: A61K-39/09A A61K-39/095 C08B-37/00P
Current US Class (main): 424-244100
Current US Class (secondary): 424-234100 424-250100 536-123100
Original US Class (main): 424244.1
Original US Class (secondary): 536123.1 424250.1 424234.1
Original Abstract: Capsular saccharides are typically anionic. In the invention, however, cationic groups are introduced, such that the modified saccharide has a repeating unit which includes both cationic and anionic groups. These cationic and anionic groups can be balanced to give a zwitterionic repeating unit. These modifications can convert a saccharide that is normally a T-independent antigen into one that can activate T cells without requiring conjugation to a carrier. Typically, the invention modifies an anionic bacterial capsular saccharide antigen by converting a neutral group in the saccharide into a cationic group e.g. to change --NHAc to --NH3 +.
Claim:
1.
1. A method for modifying a bacterial capsular saccharide antigen, comprising a step of:
* (i) if the saccharide is anionic, converting a neutral group in the saccharide into a cationic group;

* (ii) if the saccharide is cationic, converting a neutral group in the saccharide into an anionic group;

* (iii) if the saccharide is neutral, converting a first neutral group in the saccharide into an anionic group and converting a second neutral group in the saccharide into a cationic group,

thereby

providing a modified saccharide.

WIPO
Publication No. WO 2007023386 A2 (Update 200727 B)
Publication Date: 20070301
**ZWITTERIONIZATION OF CAPSULAR SACCHARIDES
ZWITTERIONISATION DE SACCHARIDES CAPSULAIRES**
Assignee: ~(except US)~ NOVARTIS VACCINES AND DIAGNOSTICS SRL, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT (NOVS)
~(only US)~ TELFORD, John, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ BERTI, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
~(only US)~ WACK, Andreas, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: DE
Inventor: TELFORD, John, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
BERTI, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
WACK, Andreas, Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: DE
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (56 pages, 35 drawings)
Application: WO 2006IB2833 A 20060824 (Local application)
Priority: GB 200517353 A 20050824
GB 20067738 A 20060419

Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BW
BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HN
HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA
MD MG MK MN MW MX MY MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE
SG SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR
HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ
TR TZ UG ZM ZW
Original IPC: A61K(99,20060101,S)
Current IPC: A61K(99,20060101,S)
Current ECLA class: A61K-39/09A A61K-39/095 C08B-37/00P
Original Abstract: Capsular saccharides are typically anionic. In the
invention, however, cationic groups are introduced, such that the
modified saccharide has a repeating unit which includes both cationic
and anionic groups. These cationic and anionic groups can be balanced
to give a zwitterionic repeating unit. These modifications can convert
a saccharide that is normally a T-independent antigen into one that can
activate T cells without requiring conjugation to a carrier. Typically,
the invention modifies an anionic bacterial capsular saccharide antigen
by converting a neutral group in the saccharide into a cationic group
e.g. to change -NHAc to -NH3 +.
Les saccharides capsulaires sont typiquement anioniques. Neanmoins dans
l'invention on introduit des groupes cationiques pour que le saccharide
modifie comporte une unite repetitive incluant a la fois des groupes
cationiques et anioniques. Ces groupes anioniques et cationiques
peuvent etre equilibres pour donner une unite zwitterionique
repetitive. Ces modifications peuvent convertir un saccharide qui est
normalement un antigene T independant en un antigene activateur de
cellules T sans necessiter de le conjuguer a un porteur. Typiquement,
l'invention modifie un antigene anionique bacterien de saccharide
capsulaire en convertissant un groupe neutre du saccharide en un groupe
cationique, par exemple en changeant -NHAc en -NH3 +.

10/7/12 (Item 12 from file: 351)
DIALOG(R)File 351:Derwent WPI

0016028263
WPI ACC NO: 2006-559893/200657
Preparing conjugate of Streptococcus agalactiae ****capsular**** saccharide and carrier molecule comprises e.g. either oxidizing the saccharide, reductive amination, producing activated saccharide and reacting with carrier molecule
Patent Assignee: CHIRON SRL (CHIR); NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS); BERTI F (BERT-I); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: BERTI F; FRANCESCO B
Patent Family (10 patents, 112 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2006082530	A2	20060810	WO 2006IB756	A	20060201	200657	B
EP 1846038	A2	20071024	EP 2006727404	A	20060201	200771	E
			WO 2006IB756	A	20060201		
AU 2006211052	A1	20060810	AU 2006211052	A	20060201	200780	E
WO 2006082530	A3	20080703				200845	E
JP 2008532930	W	20080821	WO 2006IB756	A	20060201	200857	E
			JP 2007553744	A	20060201		
MX 2007009277	A1	20070901	WO 2006IB756	A	20060201	200864	E
			MX 2007009277	A	20070801		
US 20090043077	A1	20090212	WO 2006IB756	A	20060201	200912	E
			US 2008883614	A	20080318		
CN 101304765	A	20081112	CN 200680007342	A	20060201	200918	E

				WO 2006IB756	A	20060201		
ZA 200706969	A	20090128	ZA 20076969		A	20070820	200918	E
NZ 560432	A	20101224	NZ 560432		A	20060201	201106	E
				WO 2006IB756	A	20060201		

Priority Applications (no., kind, date): GB 20052095 A 20050201

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2006082530	A2	EN	48	9	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

EP 1846038 A2 EN PCT Application WO 2006IB756
Based on OPI patent WO 2006082530

Regional Designated States,Original: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

AU 2006211052 A1 EN Based on OPI patent WO 2006082530

WO 2006082530 A3 EN

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

JP 2008532930 W JA 43 PCT Application WO 2006IB756
Based on OPI patent WO 2006082530

MX 2007009277 A1 ES PCT Application WO 2006IB756
Based on OPI patent WO 2006082530

US 20090043077 A1 EN PCT Application WO 2006IB756

CN 101304765 A ZH PCT Application WO 2006IB756
Based on OPI patent WO 2006082530

ZA 200706969 A EN 56

NZ 560432 A EN PCT Application WO 2006IB756
Based on OPI patent WO 2006082530

Alerting Abstract WO A2

NOVELTY - Preparing a conjugate of a ~Streptococcus agalactiae ~****capsular**** saccharide (I) and a carrier molecule, comprises: either oxidizing (I) to introduce aldehyde group, reductive amination of the aldehyde group, producing activated saccharide or de-N-acetylating (I), reacting the saccharide with bifunctional linker and reacting activated saccharide with a carrier molecule; or oxidizing (I) to introduce an aldehyde group into a galactose residue in the saccharide; and coupling to a carrier.

DESCRIPTION - Preparing a conjugate of a ~Streptococcus agalactiae ~****capsular**** saccharide (I) and a carrier molecule, comprises: either oxidizing (I) to introduce an aldehyde group into at least one terminal sialic acid residue in the saccharide, reductive amination of the aldehyde group with ammonia or a primary amine, to give a methylamine; reacting the methylamine with a bifunctional linker, to give an activated saccharide; and reacting the activated saccharide with a carrier molecule; or de-N-acetylating (I) to give a de-N-acetylated saccharide; reacting the de-N-acetylated saccharide with a bifunctional linker to give an activated saccharide; and reacting the activated saccharide with a carrier molecule;

or oxidizing (I) to introduce an aldehyde group into at least one galactose residue in the saccharide, to give a modified galactose residue; and coupling the modified galactose residue to a carrier molecule.

An INDEPENDENT CLAIM is also included for the conjugate, comprising (I) moiety joined to a carrier via a linker moiety, where the linker moiety is attached to a sialic acid residue in the ****capsular**** saccharide moiety.

ACTIVITY - Antibacterial.

No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The conjugate is useful for immunization.

ADVANTAGE - The process retains the sialic acid residues in a form of closure than the native ****polysaccharide**** and improves the coupling properties.

Technology Focus

BIOTECHNOLOGY - Preferred Process: The saccharide is chemically modified relative to the native ****capsular**** saccharide and is de-O-acetylated or de-N-acetylated (partially or fully). The aldehyde groups are introduced into 5-50% of the total sialic acid monosaccharide units. After conjugation, free and conjugated saccharides are separated. The oxidizing step introduces the aldehyde chemically and involves the use of a periodate salt to oxidize vicinal hydroxides. The reductive amination involves either ammonia or a primary amine of formula (NH 2 R), preferably an ammonium salt in combination with a reducing agent. The reactions with both the saccharide and the carrier involve amines, and where the linker has formula X-L-X, where the two X groups are N-oxysuccinimide and can react with the amines; and L is a linking moiety in the linker (adipic acid N-hydroxysuccinimide diester). The saccharide is, if necessary, substantially totally re-N-acetylated prior to reductive amination. The individual saccharide is attached to multiple carriers.

Preferred Components: In the conjugate, the saccharide is from one of GBS serotypes Ia, Ib, II, III or V and has its native form. The saccharide is shorter than the native ****capsular**** saccharide. The carrier is diphtheria toxoid, tetanus toxoid, CRM197, human serum albumin, an artificial protein comprising multiple human CD4+ T cell epitopes from various pathogen-derived antigens, protein D from ~H. influenzae ~ , or a ~S. agalactiae ~ protein. The carrier is attached to the saccharide via an amine group in the carrier. The conjugate has a saccharide:protein ratio (w/w) of 1:5-5:1. The bifunctional linker is hetero or homo-bifunctional.

Title Terms/Index Terms/Additional Words: PREPARATION; CONJUGATE; STREPTOCOCCUS; CAPSULE; SACCHARIDE; CARRY; MOLECULAR; COMPRISE; OXIDATION ; REDUCE; AMINATE; PRODUCE; ACTIVATE; REACT

Class Codes

International Classification (+ Attributes)

IPC + Level Value	Position	Status	Version
A61K-0039/09 A I	R		20060101
A61K-0039/09 A I	F	B	20060101
A61K-0039/09 A I	L		20060101
A61K-0039/09 A I	L	B	20060101
A61K-0039/385 A I	L	B	20060101
A61K-0047/48 A I	R		20060101
A61K-0047/48 A I	F		20060101
A61K-0047/48 A I	F	B	20060101
A61P-0031/04 A I	L	B	20060101
A61P-0037/04 A I	L		20060101
A61P-0037/04 A I	L	B	20060101
A61P-0039/04 A I	L	B	20060101
C07K-0001/00 A I	L	B	20060101
C07K-0014/765 A I	F	B	20060101
C08B-0037/00 A I	L	B	20060101

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  A61P-0039/04  A  I  L     20060101
  A61K  S  I     B  20090101
  A61K-0039/09  C  I        20060101
  A61K-0039/09  C  I     R  20060101
  A61K-0039/09  C  I  F  B  20060101
  A61K-0039/09  C  I  L  B  20060101
  A61K-0039/385  C  I  L  B  20060101
  A61K-0047/48  C  I        20060101
  A61K-0047/48  C  I     R  20060101
  A61K-0047/48  C  I  F  B  20060101
  A61P-0031/00  C  I  L  B  20060101
  A61P-0037/00  C  I        20060101
  A61P-0037/00  C  I  L  B  20060101
  A61P-0039/00  C  I  L  B  20060101
  C07K-0001/00  C  I  L  B  20090101
  C07K-0014/435  C  I  F  B  20090101
  C08B-0037/00  C  I  L  B  20090101
ECLA: A61K-039/09, A61K-047/48R2D, A61K-047/48R2L, A61K-047/48R2V
ICO:  K61K-039:60P10
US Classification, Current Main: 530-363000; Secondary: 530-402000,
536-124000
US Classification, Issued: 530363, 536124, 530402

JP Classification
  FI Term          Facet Rank Type
A61K-039/09
A61K-039/385
A61P-031/04
A61P-037/04

F-Term  View Point  Additional
 Theme   + Figure   Code
 4C085
 4C201
 4C085     AA03
 4C085     BA14
 4C085     BA38
 4C085     BB11
 4C085     BB15
 4C085     BB24
 4C085     CC07
 4C085     CC24
 4C085     DD59
 4C085     DD62
 4C085     EE06
 4C085     FF24

File Segment: CPI
DWPI Class: A11; A96; B04; D16
Manual Codes (CPI/A-M): A03-A01; A12-V01; B04-B04C; B04-C02F; B04-N02;
  B04-N03; B14-A01; B14-S11B1; D05-H07

Original Publication Data by Authority


Australia
Publication No. AU 2006211052 A1 (Update 200780 E)
Publication Date: 20060810
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: BERTI F
Language: EN
Application: AU 2006211052 A 20060201 (Local application)
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Priority: GB 20052095 A 20050201
Related Publication: WO 2006082530 A (Based on OPI patent)
Original IPC: A61K-47/48(B,I,H,EP,20060101,20060915,A,F)
Current IPC: A61K-39/09(R,I,M,EP,20060101,20080531,A)
A61K-39/09(R,I,M,EP,20060101,20080531,C)
A61K-47/48(B,I,H,EP,20060101,20060915,A,F)
A61K-47/48(B,I,H,EP,20060101,20060915,C,F)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V
Current ECLA ICO class: K61K-39:60P10

China
Publication No. CN 101304765 A (Update 200918 E)
Publication Date: 20081112
Conjugation of streptococcal capsular saccharides
Assignee: NOVARTIS VACCINES DIAGNOSTICS INC; IT (NOVS)
Inventor: FRANCESCO, BERTI, IT
Language: ZH
Application: CN 200680007342 A 20060201 (Local application)
WO 2006IB756 A 20060201 (PCT Application)
Priority: GB 20052095 A 20050201
Related Publication: WO 2006082530 A (Based on OPI patent)
Original IPC: A61K-39/09(I,CN,20060101,A,L) A61K-39/09(I,M,98,20060101,C)
A61K-47/48(I,CN,20060101,A,F) A61K-47/48(I,M,98,20060101,C)
A61P-37/00(I,M,98,20060101,C) A61P-37/04(I,CN,20060101,A,L)
Current IPC: A61K-39/09(A,I,CN,20060101,A,L) A61K-39/09(I,M,98,20060101,C)
A61K-47/48(I,CN,20060101,A,F) A61K-47/48(I,M,98,20060101,C)
A61P-37/00(I,M,98,20060101,C) A61P-37/04(I,CN,20060101,A,L)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V
Current ECLA ICO class: K61K-39:60P10
Original Abstract: This invention claims three conjugation methods for use with the capsular saccharide of Streptococcus agalactiae. In the first method, reductive animation of oxidised sialic acid residue side chains is used, but the aldehyde groups are first aminated, and then the amine is coupled to a carrier via a linker. In the second method, sialic acid residues and/or N-acetyl-glucosamine residues are de-N-acetylated to give amine groups, and the amine groups are coupled to a carrier protein via a linker. In the third method, linkage is via galactose residues in the capsular saccharide rather than sialic acid residues, which can conveniently be achieved using galactose oxidase.
Claim: [CLAIM 1] A process for preparing a conjugate of a Streptococcus agalactiae capsular saccharide and a carrier molecule, comprising the steps of: (a) oxidising a S.agalactiae capsular saccharide in order to introduce an aldehyde group into at least one terminal sialic acid residue in the saccharide; (b) subjecting the aldehyde group to reductive amination with ammonia or a primary amine, to give a -CH2-linked amine; (c) reacting the -CH2-linked amine with a bifunctional linker, to give an activated saccharide; and (d) reacting the activated saccharide with a carrier molecule, thereby giving the conjugate.
[CLAIM 2] A conjugate, comprising a Streptococcus agalactiae capsular saccharide moiety joined to a carrier via a linker moiety, wherein the linker moiety is attached to a sialic acid residue in the capsular saccharide moiety.
[CLAIM 3] The conjugate according to claim 2, obtainable by the process according to claim 1.
[CLAIM 4] The conjugate or process according to any preceding claim, wherein the saccharide is from one of GBS serotypes Ia, Ib, II, III or V.
[CLAIM 5] The conjugate or process according to any preceding claim, wherein the saccharide has its native form.
[CLAIM 6] The conjugate or process according to any one of claims 1 to 4, wherein the saccharide is shorter than the native capsular saccharide.

[CLAIM 7] The conjugate or process according to any one of claims 1 to 4, wherein the saccharide is chemically modified relative to the native capsular saccharide.
[CLAIM 8] The conjugate or process according to claim 7, wherein the saccharide is de-O-acetylated partially or fully.
[CLAIM 9] The conjugate or process according to claim 7, wherein the saccharide is de-N-acetylated partially or fully.
[CLAIM 10] The conjugate or process according to any preceding claim, wherein the carrier is diphtheria toxoid, tetanus toxoid, CRM 197, human serum albumin, an artificial protein comprising multiple human CD4+T cell epitopes from various pathogen-derived antigens, protein D from H. influenzae, or a S.agalactiae protein.
[CLAIM 11] The conjugate or process according to any preceding claim, wherein the carrier is attached to the saccharide via a -NH2 group in the carrier.
[CLAIM 12] The conjugate or process according to any preceding claim, wherein the conjugate has a saccharide: protein ratio (w/w) of between 1:5 and 5:1.
[CLAIM 13] The conjugate or process according to any preceding claim, wherein aldehyde groups are introduced into between 5% and 50% of the total sialic acid monosaccharide units.
[CLAIM 14] The process according to any preceding claim, wherein, after conjugation, free and conjugated saccharides are separated.
[CLAIM 15] The process according to any preceding claim, wherein step (a) introduces the aldehyde chemically.
[CLAIM 16] The process according to claim 15, wherein step (a) involves the use of a periodate salt to oxidise vicinal hydroxides.
[CLAIM 17] The process according to any preceding claim, wherein reductive amination involves either ammonia or a primary amine (NH2R).
[CLAIM 18] The process according to claim 17, wherein reductive amination involves an ammonium salt in combination with a reducing agent.
[CLAIM 19] The process according to any preceding claim, wherein the bifunctional linker is heterobifunctional.
[CLAIM 20] The process according to any one of claims 1 to 18, wherein the bifunctional linker is homobifunctional.
[CLAIM 21] The process according to claim 20, where the reactions with both the saccharide and the carrier involve amines, and wherein the linker has formula X-L-X, wherein: the two X groups are the same as each other and can react with the amines; and L is a linking moiety in the linker.
[CLAIM 22] The process according to claim 21, wherein X is N-oxysuccinimide.
[CLAIM 23] The process according to claim 22, wherein the linker is adipic acid N-hydroxysuccinimide diester.
[CLAIM 24] The process according to any preceding claim, wherein the saccharide is, if necessary, substantially totally re-N-acetylated prior to reductive amination.
[CLAIM 25] The process or conjugate according to any preceding claim, wherein an individual saccharide is attached to multiple carriers.
[CLAIM 26] A process for preparing a conjugate of a Streptococcus agalactiae capsular saccharide and a carrier molecule, comprising the steps of: (a) de-N-acetylating the capsular saccharide, to give a de-N-acetylated saccharide; (b) reacting the de-N-acetylated saccharide with a bifunctional linker, to give an activated saccharide; and (c) reacting the activated saccharide with a carrier molecule, thereby giving the conjugate.
[CLAIM 27] A process for preparing a conjugate of a capsular saccharide and a carrier molecule, comprising the steps of: (a) oxidising a capsular saccharide in order to introduce an aldehyde group into at least one galactose residue in the saccharide, to give a modified galactose residue; and (b) coupling the modified galactose residue to a carrier molecule.

EPO
Publication No. EP 1846038 A2 (Update 200771 E)
Publication Date: 20071024
**KONJUGATION VON STREPTOKOKKEN-KAPSELSACCHARIDEN
CONJUGATION OF STREPTOCOCCAL CAPSULAR SACCHARIDES
CONJUGAISON DE SACCHARIDES CAPSULAIRES STREPTOCOCCIQUES**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT (NOVS)
Inventor: BERTI, Francesco, Chiron Vaccines, Via Fiorentina, 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2006727404 A 20060201 (Local application)
WO 2006IB756 A 20060201 (PCT Application)
Priority: GB 20052095 A 20050201
Related Publication: WO 2006082530 A (Based on OPI patent)
Designated States: (Regional Original) AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU
Original IPC: A61K-47/48(B,I,H,EP,20060101,20060814,A,F)
A61K-47/48(B,I,M,98,20060101,20060814,C)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20080905,A,L)
A61K-39/09(B,I,H,EP,20060101,20080905,C,L)
A61K-47/48(B,I,H,EP,20060101,20080905,A,F)
A61K-47/48(B,I,H,EP,20060101,20080905,C,F)
A61P-39/00(B,I,H,EP,20060101,20080905,C,L)
A61P-39/04(B,I,H,EP,20060101,20080905,A,L)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V
Current ECLA ICO class: K61K-39:60P10
Original Abstract: Three conjugation methods for use with the capsular saccharide of Streptococcus agalactiae. In the first method, reductive animation of oxidised sialic acid residue side chains is used, but the aldehyde groups are first aminated, and then the amine is coupled to a carrier via a linker. In the second method, sialic acid residues and/or N-acetyl-glucosamine residues are de-N-acetylated to give amine groups, and the amine groups are coupled to a carrier protein via a linker. In the third method, linkage is via galactose residues in the capsular saccharide rather than sialic acid residues, which can conveniently be achieved using galactose oxidase.

Japan
Publication No. JP 2008532930 W (Update 200857 E)
Publication Date: 20080821
Language: JA (43 pages)
Application: JP 2007553744 A 20060201 (Local application)
WO 2006IB756 A 20060201 (PCT Application)
Priority: GB 20052095 A 20050201
Related Publication: WO 2006082530 A (Based on OPI patent)
Original IPC: A61K-39/09(B,I,H,JP,20060101,20080725,A,F)
A61K-39/09(B,I,M,98,20060101,20080725,C)
A61K-39/385(B,I,H,JP,20060101,20080725,A,L)
A61K-39/385(B,I,M,98,20060101,20080725,C)
A61P-31/00(B,I,M,98,20060101,20080725,C)
A61P-31/04(B,I,H,JP,20060101,20080725,A,L)
A61P-37/00(B,I,M,98,20060101,20080725,C)
A61P-37/04(B,I,H,JP,20060101,20080725,A,L)
Current IPC: A61K-39/09(B,I,H,JP,20060101,20080725,A,F)
A61K-39/09(B,I,H,JP,20060101,20080725,C,F)
A61K-39/385(B,I,H,JP,20060101,20080725,A,L)
A61K-39/385(B,I,H,JP,20060101,20080725,C,L)
A61K-47/48(R,I,M,EP,20060101,20060722,A)

A61K-47/48(R,I,M,EP,20060101,20060722,C)
A61P-31/00(B,I,H,JP,20060101,20080725,C,L)
A61P-31/04(B,I,H,JP,20060101,20080725,A,L)
A61P-37/00(B,I,H,JP,20060101,20080725,C,L)
A61P-37/04(B,I,H,JP,20060101,20080725,A,L)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V
Current ECLA ICO class: K61K-39:60P10
Current JP F-Terms: 4C085 4C201 4C085AA03 4C085BA14 4C085BA38 4C085BB11 4C085BB15 4C085BB24 4C085CC07 4C085CC24 4C085DD59 4C085DD62 4C085EE06 4C085FF24

Mexico
Publication No. MX 2007009277 A1 (Update 200864 E)
Publication Date: 20070901
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: BERTI F
Language: ES
Application: WO 2006IB756 A 20060201 (PCT Application)
MX 20079277 A 20070801 (Local application)
Priority: GB 20052095 A 20050201
Related Publication: WO 2006082530 A (Based on OPI patent)
Original IPC: A61K-47/48(I,MX,20060101,A,F) A61K-47/48(I,M,98,20060101,C)
Current IPC: A61K-47/48(I,MX,20060101,A,F) A61K-47/48(I,M,98,20060101,C)

New Zealand
Publication No. NZ 560432 A (Update 201106 E)
Publication Date: 20101224
Assignee: NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: BERTI F
Language: EN
Application: NZ 560432 A 20060201 (Local application)
WO 2006IB756 A 20060201 (PCT Application)
Priority: GB 20052095 A 20050201
Related Publication: WO 2006082530 A (Based on OPI patent)
Original IPC: A61K-39/09(I,NZ,20060101,A,L) A61K-47/48(I,NZ,20060101,A,F)
A61P-39/04(I,NZ,20060101,A,L)
Current IPC: A61K-39/09(I,NZ,20060101,A,L) A61K-47/48(I,NZ,20060101,A,F)
A61P-39/04(I,NZ,20060101,A,L)

United States
Publication No. US 20090043077 A1 (Update 200912 E)
Publication Date: 20090212
Conjugation of streptococcal capsular saccharides
Assignee: Berti, Francesco, Siena, IT Residence: IT (BERT-I)
Inventor: Berti, Francesco, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY R338, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2008883614 A 20080318 (Local application)
WO 2006IB756 A 20060201 (PCT Application)
Priority: GB 20052095 A 20050201
Original IPC: C07K-1/00(B,I,H,US,20060101,20090212,A,L)
C07K-1/00(B,I,M,98,20060101,20090212,C)
C07K-14/435(B,I,M,98,20060101,20090212,C)
C07K-14/765(B,I,H,US,20060101,20090212,A,F)
C08B-37/00(B,I,H,US,20060101,20090212,A,L)
C08B-37/00(B,I,M,98,20060101,20090212,C)
Current IPC: A61K-39/09(R,I,M,EP,20060101,20080531,A)
A61K-39/09(R,I,M,EP,20060101,20080531,C)
A61K-47/48(R,I,M,EP,20060101,20060722,A)
A61K-47/48(R,I,M,EP,20060101,20060722,C)
C07K-1/00(B,I,H,US,20060101,20090212,A,L)

C07K-1/00(B,I,H,US,20090101,20090212,C,L)
C07K-14/435(B,I,H,US,20090101,20090212,C,F)
C07K-14/765(B,I,H,US,20060101,20090212,A,F)
C08B-37/00(B,I,H,US,20060101,20090212,A,L)
C08B-37/00(B,I,H,US,20090101,20090212,C,L)
Current US Class (main): 530-363000
Current US Class (secondary): 530-402000 536-124000
Original US Class (main): 530363
Original US Class (secondary): 536124 530402
Original Abstract: Three conjugation methods for use with the capsular saccharide of ~Streptococcus agalactiae~. In the first method, reductive animation of oxidised sialic acid residue side chains is used, but the aldehyde groups are first aminated, and then the amine is coupled to a carrier via a linker. In the second method, sialic acid residues and/or N-acetyl-glucosamine residues are de-N-acetylated to give amine groups, and the amine groups are coupled to a carrier protein via a linker. In the third method, linkage is via galactose residues in the capsular saccharide rather than sialic acid residues, which can conveniently be achieved using galactose oxidase.
Claim:
1.
1. A process for preparing a conjugate of a ~Streptococcus agalactiae~ capsular saccharide and a carrier molecule, comprising the steps of: (a) oxidising a ~S. agalactiae~ capsular saccharide in order to introduce an aldehyde group into at least one terminal sialic acid residue in the saccharide; (b) subjecting the aldehyde group to reductive amination with ammonia or a primary amine, to give a --CH2-linked amine; (c) reacting the --CH2-linked amine with a bifunctional linker, to give an activated saccharide; and (d) reacting the activated saccharide with a carrier molecule, thereby giving the conjugate.

WIPO
Publication No. WO 2006082530 A2 (Update 200657 B)
Publication Date: 20060810
**CONJUGATION OF STREPTOCOCCAL CAPSULAR SACCHARIDES
CONJUGAISON DE SACCHARIDES CAPSULAIRES STREPTOCOCCIQUES**
Assignee: ~(except US)~ CHIRON SRL, Via Fiorentina 1, I-53100 Siena, IT
Residence: IT Nationality: IT (CHIR)
~(only US)~ BERTI, Francesco, Chiron Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: BERTI, Francesco, Chiron Vaccines, Via Fiorentina, 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (48 pages, 9 drawings)
Application: WO 2006IB756 A 20060201 (Local application)
Priority: GB 20052095 A 20050201
Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: A61K-47/48(B,I,H,EP,20060101,A,F)
Current IPC: A61K-39/09(R,I,M,EP,20060101,20080531,A)
A61K-39/09(R,I,M,EP,20060101,20080531,C)
A61K-47/48(B,I,H,EP,20060101,20060810,A,F)
A61K-47/48(B,I,H,EP,20060101,20060810,C,F)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V

Current ECLA ICO class: K61K-39:60P10
Original Abstract: Three conjugation methods for use with the capsular saccharide of Streptococcus agalactiae. In the first method, reductive animation of oxidised sialic acid residue side chains is used, but the aldehyde groups are first aminated, and then the amine is coupled to a carrier via a linker. In the second method, sialic acid residues and/or N-acetyl-glucosamine residues are de-N-acetylated to give amine groups, and the amine groups are coupled to a carrier protein via a linker. In the third method, linkage is via galactose residues in the capsular saccharide rather than sialic acid residues, which can conveniently be achieved using galactose oxidase.
L'invention concerne trois procedes de conjugaison destines a etre utilises avec les saccharides capsulaires de Streptococcus agalactiae. Dans le premier procede, l'amination reductrice de chaines laterales de restes d'acide sialique oxyde est utilisee, mais les groupes aldehyde sont tout d'abord amines, puis l'amine est couplee a un support via un lieur. Dans le second procede, des residus d'acide sialique et/ou des residus de N-acetyl-glucosamine sont de-N-acetyles pour donner des groupes amine, et les groupes amine sont couples a une proteine via un lieur. Dans le troisieme procede, la liaison s'effectue via des residus de galactose dans le saccharide capsulaire plutot que dans les residus d'acide sialique qui peuvent etre facilement obtenus au moyen de galactose oxydase.

Publication No. WO 2006082530 A3 (Update 200845 E)
Publication Date: 20080703
Assignee: NOVARTIS VACCINES DIAGNOSTICS INC; IT (NOVS)
Inventor: BERTI F
Language: EN
Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: A61K-39/09(B,I,H,EP,20060101,A,L)
A61K-39/09(B,I,M,98,20060101,C) A61K-47/48(B,I,H,EP,20060101,A,F)
A61K-47/48(B,I,M,98,20060101,C) A61P-37/00(B,I,M,98,20060101,C)
A61P-37/04(B,I,H,EP,20060101,A,L)
Current IPC: A61K-39/09(B,I,H,EP,20060101,20080703,A,L)
A61K-39/09(B,I,H,EP,20060101,20080703,C,L)
A61K-47/48(B,I,H,EP,20060101,20080703,A,F)
A61K-47/48(B,I,H,EP,20060101,20080703,C,F)
A61P-37/00(B,I,H,EP,20060101,20080703,C,L)
A61P-37/04(B,I,H,EP,20060101,20080703,A,L)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V
Current ECLA ICO class: K61K-39:60P10
South Africa
Publication No. ZA 200706969 A (Update 200918 E)
Publication Date: 20090128
Assignee: NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: BERTI F
Language: EN (56 pages)
Application: ZA 20076969 A 20070820 (Local application)
Priority: GB 20052095 A 20050201
Original IPC: A61K(A)
Current IPC: A61K(B,A,I,H,ZA,20090101,20090820,S)
A61K-39/09(R,I,M,EP,20060101,20080531,A)
A61K-39/09(R,I,M,EP,20060101,20080531,C)
A61K-47/48(R,I,M,EP,20060101,20060722,A)

A61K-47/48(R,I,M,EP,20060101,20060722,C)
Current ECLA class: A61K-39/09 A61K-47/48R2D A61K-47/48R2L A61K-47/48R2V
Current ECLA ICO class: K61K-39:60P10

10/7/13 (Item 13 from file: 351)
DIALOG(R)File 351:Derwent WPI

0016018634
WPI ACC NO: 2006-550264/200656
XRAM Acc No: C2006-171980
Purifying Streptococcus agalactiae ****capsular**** ****polysaccharide**** involves treating suspension of streptococcal proteins, nucleic acids and ****polysaccharide**** with aqueous metal cation and alcohol, and treating aqueous material with cationic detergent
Patent Assignee: CHIRON SRL (CHIR); NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS); COSTANTINO P (COST-I)
Inventor: COSTANTINO P; PAOLO C
Patent Family (11 patents, 112 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2006082527	A2	20060810	WO 2006IB626	A	20060201	200656	B
EP 1848746	A2	20071031	EP 2006710574	A	20060201	200771	E
			WO 2006IB626	A	20060201		
AU 2006211049	A1	20060810	AU 2006211049	A	20060201	200801	E
CN 101146829	A	20080319	CN 200680007341	A	20060201	200841	E
			WO 2006IB626	A	20060201		
JP 2008528052	W	20080731	WO 2006IB626	A	20060201	200853	E
			JP 2007553742	A	20060201		
MX 2007009276	A1	20070901	WO 2006IB626	A	20060201	200864	E
			MX 20079276	A	20070801		
ZA 200706968	A	20081126	ZA 20076968	A	20070820	200914	E
US 20100063270	A1	20100311	WO 2006IB626	A	20060201	201019	E
			US 2008883615	A	20080512		
NZ 560928	A	20100528	NZ 560928	A	20060201	201050	E
			WO 2006IB626	A	20060201		
EP 2270056	A2	20110105	EP 2006710574	A	20060201	201104	E
			EP 2010179778	A	20060201		
EP 2270056	A3	20110302	EP 2006710574	A	20060201	201117	E
			EP 2010179778	A	20060201		

Priority Applications (no., kind, date): GB 20052096 A 20050201

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2006082527	A2	EN	39	10	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

EP 1848746	A2	EN	PCT Application WO 2006IB626 Based on OPI patent WO 2006082527

Regional Designated States,Original: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

AU 2006211049	A1	EN	Based on OPI patent WO 2006082527
CN 101146829	A	ZH	PCT Application WO 2006IB626 Based on OPI patent WO 2006082527

JP 2008528052	W	JA	38	PCT Application WO 2006IB626 Based on OPI patent WO 2006082527
MX 2007009276	A1	ES		PCT Application WO 2006IB626 Based on OPI patent WO 2006082527
ZA 200706968	A	EN	44	
US 20100063270	A1	EN		PCT Application WO 2006IB626
NZ 560928	A	EN		PCT Application WO 2006IB626 Based on OPI patent WO 2006082527
EP 2270056	A2	EN		Division of application EP 2006710574 Division of patent EP 1848746 Regional Designated States,Original: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU
EP 2270056	A3	EN		Division of application EP 2006710574 Division of patent EP 1848746 Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR AL BA HR MK YU

Alerting Abstract WO A2

NOVELTY - Purification of ~Streptococcus agalactiae ~ ****capsular**** ****polysaccharide**** involves treating a suspension comprising streptococcal proteins, nucleic acids and ****capsular**** ****polysaccharide**** with an aqueous metal cation and an alcohol to precipitate nucleic acids and proteins; separating the precipitated material from the aqueous material; and treating the aqueous material with a cationic detergent to precipitate the ****capsular**** ****polysaccharide****.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a composition comprising the purified ~Streptococcus agalactiae ~ ****capsular**** ****polysaccharide****.

ACTIVITY - Antibacterial.

No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - For purification of ~Streptococcus agalactiae ~ ****capsular**** ****polysaccharide**** (claimed) useful in vaccine for bacterial infections.

ADVANTAGE - The process avoids the need for DNase, RNase and/or protease treatment; is completed in less than three days after release of saccharide from the bacteria and has yield of about 60 (preferably 90)%. The saccharides have a very low protein contamination and a very low absorbance at 280 nm. The purity of the saccharide is at least 89 (preferably >=98)%.

Technology Focus

BIOTECHNOLOGY - Preferred Composition: The composition has UV absorbance at 280 nm of less than 0.20. The ratio of UV absorbance of the composition at 280 nm to the UV absorbance at 260 nm is greater than 0.85. The UV absorbance spectrum of the composition between 220 - 300 nm does exhibit either a shoulder or peak at around 270 nm. The UV spectrum of the composition between 250 - 275 nm has neither a maximum point nor a point of inflexion. The purity of the saccharide is at least 89% relative to the total weight of saccharide, protein and nucleic acid in the composition.

Preferred Components: The ****polysaccharide**** is from ~S. agalactiae ~ serotype selected from Ia, Ib, II, III, IV, V, VI, VII or VIII (preferably Ia, Ib, II, III or V). The ****polysaccharide**** is a full-length ****capsular********polysaccharide**** and has a molecular weight greater than 30 kDa. The saccharide is partially or fully de-O-acetylated or de-N-acetylated. The suspension is the supernatant from a centrifuged ~S. agalactiae ~ culture and is prepared by treating (preferably chemically, enzymatically or by base extraction), ~S. agalactiae ~ such that the ****capsular**** saccharide is released. The ****capsular**** saccharide is released by treatment with both mutanolysin and

beta-N-acetylglucosaminidase, or by treatment with a type II phosphodiesterase.

INORGANIC CHEMISTRY - The aqueous metal cation is monovalent or divalent (preferably Mg ++ , Mn4 ++ or Ca ++ (preferably Ca ++ (10 - 500 mM)). The aqueous medium comprises Mg ++ , Mn ++ or Ca ++ .

ORGANIC CHEMISTRY - Preferred Method: The alcohol is added to the suspension to give a final alcohol concentration of 10 - 50%. The precipitate is separated by centrifugation. The supernatant after centrifugation is subjected to microfiltration. A step of diafiltration is performed after step (a) and before step (c). The method further involves re-solubilizing the saccharide into aqueous medium or into alcoholic medium. The alcoholic medium has a final concentration of 70 - 95%.

Preferred Components: The alcohol is a lower alcohol (preferably ethanol or isopropanol). The cationic salt in step (c) is a tetrabutylammonium or cetyltrimethylammonium salt, such as cetyltrimethylammonium bromide.

Title Terms/Index Terms/Additional Words: PURIFICATION; STREPTOCOCCUS; CAPSULE; ****POLYSACCHARIDE****; TREAT; SUSPENSION; PROTEIN; NUCLEIC; ACID; AQUEOUS; METAL; CATION; ALCOHOL; MATERIAL; DETERGENT

Class Codes
International Classification (+ Attributes)

IPC + Level Value Position Status Version
A61K-0039/02 A I L B 20060101
A61P-0031/04 A I L B 20060101
C08B-0037/00 A I L B 20060101
C08B-0037/00 A I F 20060101
C08B-0037/00 A I R 20060101
C08B-0037/00 A I F B 20060101
C12P-0019/04 A I F B 20060101
C12P-0019/04 A I L 20060101
C12P-0019/04 A I R 20060101
C12P-0019/04 A I L B 20060101
A61K-0039/02 C I L B 20060101
A61P-0031/00 C I L B 20060101
C08B S I B 20090101
C08B-0037/00 C I L B 20060101
C08B-0037/00 C I 20060101
C08B-0037/00 C I R 20060101
C08B-0037/00 C I B 20060101
C08B-0037/00 C I F B 20100101
C12P S I B 20090101
C12P-0019/00 C I F B 20060101
C12P-0019/00 C I 20060101
C12P-0019/00 C I R 20060101
C12P-0019/00 C I L B 20100101

ECLA: C08B-037/00K, C08B-037/00P, C12P-019/04
US Classification, Current Main: 536-123100
US Classification, Issued: 536123.1

JP Classification

FI Term	Facet	Rank	Type
A61K-039/02			
A61P-031/04			
C08B-037/00	P		
C12P-019/04	C		ZNA

F-Term

View Point + Figure	Additional Code
4B064	
4C085	
4C090	
4C201	

4C085 AA03
4C090 AA04
4C090 AA09
4B064 AF11
4C085 BA14
4C090 BA94
4C090 BC25
4C090 BD37
4B064 CA02
4C090 CA18
4C085 CC07
4B064 CC15
4B064 CE03
4B064 CE06
4B064 CE11
4B064 DA01
4C090 DA23
4C085 DD37

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B04-C02F; B04-E01; B04-L05; B04-N03; B05-A01B; B05-A03A1; B10-A22; B10-E04D; B11-B03; B14-S11B1; D05-A02C; D05-H07; D05-H13

Original Publication Data by Authority

Australia
Publication No. AU 2006211049 A1 (Update 200801 E)
Publication Date: 20060810
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: EN
Application: AU 2006211049 A 20060201 (Local application)
Priority: GB 20052096 A 20050201
Related Publication: WO 2006082527 A (Based on OPI patent)
Original IPC: C08B-37/00(B,I,H,EP,20060101,20061116,A,F)
C12P-19/04(B,I,H,EP,20060101,20061116,A,L)
Current IPC: C08B-37/00(B,I,H,EP,20060101,20061116,A,F)
C08B-37/00(B,I,H,EP,20060101,20061116,C,F)
C12P-19/00(B,I,H,EP,20060101,20061116,C,L)
C12P-19/04(B,I,H,EP,20060101,20061116,A,L)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04

China
Publication No. CN 101146829 A (Update 200841 E)
Publication Date: 20080319
Purification of streptococcal capsular polysaccharide
Assignee: CHIRON SRL; IT (CHIR)
Inventor: PAOLO C
Language: ZH
Application: CN 200680007341 A 20060201 (Local application)
WO 2006IB626 A 20060201 (PCT Application)
Priority: GB 20052096 A 20050201
Related Publication: WO 2006082527 A (Based on OPI patent)
Original IPC: C08B-37/00(I,CN,20060101,A,F) C08B-37/00(I,M,98,20060101,C)
C12P-19/00(I,M,98,20060101,C) C12P-19/04(I,CN,20060101,A,L)
Current IPC: C08B-37/00(B,I,H,CN,20060101,20080319,A,F)
C08B-37/00(B,I,H,CN,20060101,20080319,C,F)
C12P-19/00(B,I,H,CN,20060101,20080319,C,L)
C12P-19/04(B,I,H,CN,20060101,20080319,A,L)

Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04

Original Abstract: A purification method for the capsular polysaccharide of streptococcus agalactiae, wherein, the saccharide is initially treated by an aqueous mixture of an alcohol and a calcium salt, then it is processed with precipitation by a cationic detergent. This method can be completed in less than three days and has a yield of around 60%. It avoids the need for DNase, RNase and/or protease treatment. The saccharides obtained by this method have a very low protein contamination and a very low absorbance at 280nm.

Claim: [CLAIM 1] A purification method for the capsular polysaccharide of streptococcus agalactiae, including following steps, (a) using an aqueous positive ion and alcohol to treat the mixture suspension containing streptococcus protein, nucleic acid and capsular polysaccharide to deposit nucleic acid and protein; (b) separating the deposited substance and aqueous substance; and (c) using a cationic detergent to treat the aqueous substance so as to deposit the capsular polysaccharide.

[CLAIM 2] The method according to claim 1, wherein, said polysaccharose is selected from none-streptococcus lactis serological type of Ia, Ib, II, III, IV, V, VI, VII or VIII.

[CLAIM 3] The method according to claim 2, wherein, said serological type is selected from Ia, Ib, II, III or V.

[CLAIM 4] The method according to any one of said claims, wherein, said polysaccharose is basically capsular polysaccharide with whole length.

[CLAIM 5] The method according to any one of said claims, wherein, molecular weight of said polysaccharose is more than 30 kDa.

[CLAIM 6] The method according to any one of said claims, wherein, said saccharides are partially or completely deoxy-acetylated.

[CLAIM 7] The method according to any one of said claims, wherein, said saccharides are partially or completely denitrifying-acetylated.

[CLAIM 8] The method according to any one of said claims, wherein, said mixture suspension is supernatant fluid of centrifugal streptococcus agalactiae culture.

[CLAIM 9] The method according to any one of claims 1-7, wherein, the capsular polysaccharide is released by treating the streptococcus agalactiae so as to prepare said mixture suspension.

[CLAIM 10] The method according to claim 9, wherein, said capsular polysaccharide is released by a chemical treatment or an enzyme treatment.

[CLAIM 11] The method according to claim 10, wherein, said capsular polysaccharide is released by a alkali abstraction.

[CLAIM 12] The method according to claim 10, wherein, said capsular polysaccharide is released by a treatment using mutanolysin and beta-N-acetyl amidogen heteroside enzyme.

[CLAIM 13] The method according to claim 10, wherein, said capsular polysaccharide is released by a treatment of II type phosphodiesterase.

[CLAIM 14] The method according to any one of said claims, wherein, said alcohol is a low-grade alcohol.

[CLAIM 15] The method according to claim 14, wherein, said alcohol is ethanol or isopropanol.

[CLAIM 16] The method according to any one of said claims, wherein, said mixture suspension is added with said alcohol until concentration of the alcohol is between 10-50%.

[CLAIM 17] The method according to any one of said claims, wherein, said aqueous metal positive ion is monovalent or divalent.

[CLAIM 18] The method according to claim 17, wherein, said positive ion is Mg++, Mn++ or Ca++.

[CLAIM 19] The method according to claim 18, wherein, Ca++ is used, the finally concentration of it is between 10-500mM.

[CLAIM 20] The method according to any one of said claims, wherein, step (b) includes centrifugation.

[CLAIM 21] The method according to claim 20, wherein, the centrifugal

supernatant fluid is filtered through a micro-hole.

[CLAIM 22] The method according to any one of said claims, wherein, a percolation step is performed after the step (a) and before the step (c).

[CLAIM 23] The method according to any one of said claims, wherein, the positive ion step in step (c) is tetrabutyl ammonium salt or hexadecyl trimethyl ammonium salt, such as CTAB.

[CLAIM 24] The method according to any one of said claims, wherein, said method further includes re-dissolving said saccharides into aqueous medium or alcohol medium.

[CLAIM 25] The method according to claim 24, wherein, using aqueous medium to re-dissolving said saccharides, wherein said aqueous medium contains Mg++, Mn++ or Ca++.

[CLAIM 26] The method according to claim 24, wherein, using alcohol medium to re-dissolving said saccharides, wherein the final concentration of the alcohol is between 70-95%.

[CLAIM 27] A combination containing streptococcus agalactiae obtained by the method according to any one of said claims.

[CLAIM 28] The combination according to claim 27, wherein, 280 nm ultraviolet absorbency of said combination is less than 0.2.

[CLAIM 29] The combination according to claim 27, wherein, a ratio between 280 nm ultraviolet absorbency of said combination and 260 nm ultraviolet absorbency us more than 0.85.

[CLAIM 30] The combination according to claim 27, wherein, ultraviolet absorbency spectrum of said combination between 220-300 nm is about 270nm, and it shows an acromion or a peak.

[CLAIM 31] The combination according to claim 27, wherein, ultraviolet absorbency spectrum of said combination between 250-275nm has no highest point or flex point.

[CLAIM 32] The combination according to claim 27, wherein, relative to whole weight of the saccharides, protein and nucleic acid in the combination, purity quotient of said saccharides is at least 89%.

EPO
Publication No. EP 1848746 A2 (Update 200771 E)
Publication Date: 20071031
**REINIGUNG VON STREPTOCOCCUS-KAPSELPOLYSACCHARID
PURIFICATION OF STREPTOCOCCAL CAPSULAR POLYSACCHARIDE
PURIFICATION DE POLYSACCHARIDES CAPSULAIRES STREPTOCOCCIQUES**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT (NOVS)
Inventor: COSTANTINO, PAOLO, CHIRON VACCINES, VIA FLORENTINA 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2006710574 A 20060201 (Local application)
WO 2006IB626 A 20060201 (PCT Application)
Priority: GB 20052096 A 20050201
Related Publication: WO 2006082527 A (Based on OPI patent)
Designated States: (Regional Original) AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU
Original IPC: C08B-37/00(B,I,H,EP,20060101,20060814,A,F)
C08B-37/00(B,I,M,98,20060101,20060814,C)
C12P-19/00(B,I,M,98,20060101,20060814,C)
C12P-19/04(B,I,H,EP,20060101,20060814,A,L)
Current IPC: C08B-37/00(B,I,H,EP,20060101,20060814,A,F)
C08B-37/00(B,I,H,EP,20060101,20060814,C,F)
C12P-19/00(B,I,H,EP,20060101,20060814,C,L)
C12P-19/04(B,I,H,EP,20060101,20060814,A,L)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04
Original Abstract: A purification process for the capsular polysaccharide

of S.agalactiae in which the saccharide is initially treated with an aqueous mixture of an alcohol and a calcium salt, followed by precipitation with a cationic detergent. The process can be completed in less than three days and has a yield of around 60%. It avoids the need for DNase, RNase and/or protease treatment. The saccharides of the process have a very low protein contamination and a very low absorbance at 280nm.

Publication No. EP 2270056 A2 (Update 201104 E)
Publication Date: 20110105
**Reinigung von Streptococcus-kapselpolysaccharid
Purification of streptococcal capsular polysaccharide
Purification du polysaccharide capsulaire de streptococcus**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT (NOVS)
Inventor: Costantino, Paolo, CHIRON VACCINES, VIA FLORENTINA 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, One Southampton Row, London, WC1B 5HA, GB
Language: EN
Application: EP 2010179778 A 20060201 (Local application)
EP 2006710574 A 20060201 (Division of application)
Priority: GB 20052096 A 20050201
Related Publication: EP 1848746 A (Division of patent)
Designated States: (Regional Original) AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU
Original IPC: C08B-37/00(B,I,H,EP,20060101,20101126,A,F)
C12P-19/04(B,I,H,EP,20060101,20101126,A,L)
Current IPC: C08B-37/00(B,I,H,EP,20060101,20101126,A,F)
C12P-19/04(B,I,H,EP,20060101,20101126,A,L)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04
Original Abstract: A purification process for the capsular polysaccharide of ~S.agalactiae~ in which the saccharide is initially treated with an aqueous mixture of an alcohol and a calcium salt, followed by precipitation with a cationic detergent. The process can be completed in less than three days and has a yield of around 60%. It avoids the need for DNase, RNase and/or protease treatment. The saccharides of the process have a very low protein contamination and a very low absorbance at 280nm.
Claim:
1.A process for purifying a
~Streptococcus agalactiae~ capsular
polysaccharide, comprising the step of removing contaminating
nucleic acids and/or proteins by the use of precipitation.

Publication No. EP 2270056 A3 (Update 201117 E)
Publication Date: 20110302
Purification of streptococcal capsular polysaccharide
Assignee: NOVARTIS VACCINESDIAGNOSTICS INC; IT (NOVS)
Inventor: COSTANTINO P, IT
Language: EN
Application: EP 2010179778 A 20060201 (Local application)
EP 2006710574 A 20060201 (Division of application)
Priority: GB 20052096 A 20050201
Related Publication: EP 1848746 A (Division of patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR AL BA HR MK YU
Original IPC: C08B-37/00(B,I,H,EP,20060101,20101126,A,F)
C12P-19/04(B,I,H,EP,20060101,20101126,A,L)
Current IPC: C08B-37/00(B,I,H,EP,20060101,20101126,A,F)
C12P-19/04(B,I,H,EP,20060101,20101126,A,L)
Original Abstract: A purification process for the capsular polysaccharide of S.agalactiae in which the saccharide is initially treated with an

aqueous mixture of an alcohol and a calcium salt, followed by precipitation with a cationic detergent. The process can be completed in less than three days and has a yield of around 60%. It avoids the need for DNase, RNase and/or protease treatment. The saccharides of the process have a very low protein contamination and a very low absorbance at 280nm.

Japan
Publication No. JP 2008528052 W (Update 200853 E)
Publication Date: 20080731
Language: JA (38 pages)
Application: JP 2007553742 A 20060201 (Local application)
WO 2006IB626 A 20060201 (PCT Application)
Priority: GB 20052096 A 20050201
Related Publication: WO 2006082527 A (Based on OPI patent)
Original IPC: A61K-39/02(B,I,H,JP,20060101,20080704,A,L)
A61K-39/02(B,I,M,98,20060101,20080704,C)
A61P-31/00(B,I,M,98,20060101,20080704,C)
A61P-31/04(B,I,H,JP,20060101,20080704,A,L)
C08B-37/00(B,I,H,JP,20060101,20080704,A,L)
C08B-37/00(B,I,M,98,20060101,20080704,C)
C12P-19/00(B,I,M,98,20060101,20080704,C)
C12P-19/04(B,I,H,JP,20060101,20080704,A,F)
Current IPC: A61K-39/02(B,I,H,JP,20060101,20080704,A,L)
A61K-39/02(B,I,H,JP,20060101,20080704,C,L)
A61P-31/00(B,I,H,JP,20060101,20080704,C,L)
A61P-31/04(B,I,H,JP,20060101,20080704,A,L)
C08B-37/00(B,I,H,JP,20060101,20080704,A,L)
C08B-37/00(B,I,H,JP,20060101,20080704,C,L)
C12P-19/00(B,I,H,JP,20060101,20080704,C,F)
C12P-19/04(B,I,H,JP,20060101,20080704,A,F)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04
Current JP F-Terms: 4B064 4C085 4C090 4C201 4C085AA03 4C090AA04 4C090AA09 4B064AF11 4C085BA14 4C090BA94 4C090BC25 4C090BD37 4B064CA02 4C090CA18 4C085CC07 4B064CC15 4B064CE03 4B064CE06 4B064CE11 4B064DA01 4C090DA23 4C085DD37

Mexico
Publication No. MX 2007009276 A1 (Update 200864 E)
Publication Date: 20070901
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: ES
Application: WO 2006IB626 A 20060201 (PCT Application)
MX 20079276 A 20070801 (Local application)
Priority: GB 20052096 A 20050201
Related Publication: WO 2006082527 A (Based on OPI patent)
Original IPC: C08B-37/00(I,MX,20060101,A,F) C08B-37/00(I,M,98,20060101,C)
C12P-19/00(I,M,98,20060101,C) C12P-19/04(I,MX,20060101,A,L)
Current IPC: C08B-37/00(I,MX,20060101,A,F) C08B-37/00(I,M,98,20060101,C)
C12P-19/00(I,M,98,20060101,C) C12P-19/04(I,MX,20060101,A,L)

New Zealand
Publication No. NZ 560928 A (Update 201050 E)
Publication Date: 20100528
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: EN
Application: NZ 560928 A 20060201 (Local application)
WO 2006IB626 A 20060201 (PCT Application)
Priority: GB 20052096 A 20050201
Related Publication: WO 2006082527 A (Based on OPI patent)

Original IPC: C08B-37/00(I,NZ,20060101,A,F) C08B-37/00(I,M,98,20060101,C)
C12P-19/00(I,M,98,20060101,C) C12P-19/04(I,NZ,20060101,A,L)
Current IPC: C08B-37/00(B,I,H,NZ,20060101,20100622,A,F)
C08B-37/00(B,I,H,NZ,20100101,20100622,C,F)
C12P-19/00(B,I,H,NZ,20100101,20100622,C,L)
C12P-19/04(B,I,H,NZ,20060101,20100622,A,L)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04

United States
Publication No. US 20100063270 A1 (Update 201019 E)
Publication Date: 20100311
Purification of Streptococcal Capsular Polysaccharide
Assignee: Costantino, Paolo, Siena, IT Residence: IT (COST-I)
Inventor: Costantino, Paolo, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY-
X100B, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2008883615 A 20080512 (Local application)
WO 2006IB626 A 20060201 (PCT Application)
Priority: GB 20052096 A 20050201
Original IPC: C08B-37/00(B,I,H,US,20060101,20100311,A,F)
C08B-37/00(B,I,M,98,20060101,20100311,C)
Current IPC: C08B-37/00(B,I,H,US,20060101,20100311,A,F)
C08B-37/00(B,I,M,98,20060101,20100311,C)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04
Current US Class (main): 536-123100
Original US Class (main): 536123.1
Original Abstract: A purification process for the capsular polysaccharide of ~S. agalactiae~ in which the saccharide is initially treated with an aqueous mixture of an alcohol and a calcium salt, followed by precipitation with a cationic detergent. The process can be completed in less than three days and has a yield of around 60%. It avoids the need for DNase, RNase and/or protease treatment. The saccharides of the process have a very low protein contamination and a very low absorbance at 280 nm.
Claim:
1.
1. A process for purifying a ~Streptococcus agalactiae~ capsular polysaccharide, comprising the steps of: (a) treating a suspension comprising streptococcal proteins, nucleic acids and capsular polysaccharide with an aqueous metal cation and an alcohol in order to precipitate nucleic acids and proteins; (b) separating the precipitated material from the aqueous material; and (c) treating the aqueous material with a cationic detergent in order to precipitate the capsular polysaccharide.

WIPO
Publication No. WO 2006082527 A2 (Update 200656 B)
Publication Date: 20060810
**PURIFICATION OF STREPTOCOCCAL CAPSULAR POLYSACCHARIDE
PURIFICATION DE POLYSACCHARIDES CAPSULAIRES STREPTOCOCCIQUES**
Assignee: ~(except US)~ CHIRON SRL, Via Fiorentina 1, I-53100 Siena, IT
Residence: IT Nationality: IT (CHIR)
~(only US)~ COSTANTINO, Paolo, Chiron Vaccines, Via Florentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: COSTANTINO, Paolo, Chiron Vaccines, Via Florentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John et al., Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN (39 pages, 10 drawings)
Application: WO 2006IB626 A 20060201 (Local application)
Priority: GB 20052096 A 20050201

Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BW
BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR
HU ID IL IN IS JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MD MG
MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM
SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR
HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ
TR TZ UG ZM ZW
Original IPC: C08B-37/00(B,I,H,EP,20060101,A,F)
C12P-19/00(B,I,H,98,20060101,C,L) C12P-19/04(B,I,H,EP,20060101,A,L)
Current IPC: C08B-37/00(B,I,H,EP,20060101,20060810,A,F)
C08B-37/00(B,I,H,EP,20060101,20060810,C,F)
C12P-19/00(B,I,H,EP,20060101,20060810,C,L)
C12P-19/04(B,I,H,EP,20060101,20060810,A,L)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04
Original Abstract: A purification process for the capsular polysaccharide
of S.agalactiae in which the saccharide is initially treated with an
aqueous mixture of an alcohol and a calcium salt, followed by
precipitation with a cationic detergent. The process can be completed
in less than three days and has a yield of around 60%. It avoids the
need for DNase, RNase and/or protease treatment. The saccharides of the
process have a very low protein contamination and a very low absorbance
at 280nm.
L'invention concerne un procede de purification pour polysaccharides
capsulaires de type S. agalactiae, selon lequel les saccharides sont
tout d'abord traites avec un melange aqueux a base d'alcool et de sel
de calcium, ledit traitement etant suivi par la precipitation d'un
detergent cationique. Le procede peut etre effectue en moins de trois
jours et presente un rendement d'environ 60%. Ledit procede evite
d'avoir recours a un traitement par DNase, RNase et ou protease. Les
saccharides selon le procede presentent un taux tres reduit de
contamination proteinique et un taux d'absorbance tres reduit a 280 nm.

South Africa
Publication No. ZA 200706968 A (Update 200914 E)
Publication Date: 20081126
Assignee: NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: EN (44 pages)
Application: ZA 20076968 A 20070820 (Local application)
Priority: GB 20052096 A 20050201
Original IPC: C08B(A) C12P(B)
Current IPC: C08B(B,A,I,H,ZA,20090101,20090812,S)
C08B-37/00(R,I,M,EP,20060101,20070721,A)
C08B-37/00(R,I,M,EP,20060101,20070721,C)
C12P(B,I,H,ZA,20090101,20090812,S)
C12P-19/00(R,I,M,EP,20060101,20070721,C)
C12P-19/04(R,I,M,EP,20060101,20070721,A)
Current ECLA class: C08B-37/00K C08B-37/00P C12P-19/04

10/7/14 (Item 14 from file: 351)
DIALOG(R)File 351:Derwent WPI

0014974548 - Drawing available
WPI ACC NO: 2005-322381/200533
XRAM Acc No: C2005-100521
Modified serogroup meningococcal ****capsular**** saccharide useful for the
preparation of immunogenic compositions have altered levels of
ortho-acetylation at the specified positions of their sialic acid residues

Patent Assignee: CHIRON SRL (CHIR); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS); NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS); BERTI F (BERT-I); COSTANTINO P (COST-I)
Inventor: COSTANTINO P; BERTI F
Patent Family (14 patents, 107 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2005033148	A1	20050414	WO 2004IB3366	A	20041004	200533	B
EP 1678212	A1	20060712	EP 2004791697	A	20041004	200648	E
			WO 2004IB3366	A	20041004		
MX 2006003729	A1	20060701	WO 2004IB3366	A	20041004	200677	E
			MX 20063729	A	20060403		
AU 2004278170	A1	20050414	AU 2004278170	A	20041004	200681	E
BR 200415048	A	20061212	BR 200415048	A	20041004	200701	E
			WO 2004IB3366	A	20041004		
JP 2007507578	W	20070329	WO 2004IB3366	A	20041004	200725	E
			JP 2006530760	A	20041004		
CN 1882612	A	20061220	CN 200480034525	A	20041004	200730	E
AU 2008202708	A1	20080710	AU 2004278170	A	20041004	200864	NCE
			AU 2008202708	A	20080619		
AU 2004278170	B2	20080703	AU 2004278170	A	20041004	200867	E
NZ 546668	A	20090626	NZ 546668	A	20041004	200946	E
			WO 2004IB3366	A	20041004		
RU 2362784	C2	20090727	WO 2004IB3366	A	20041004	200950	E
			RU 2006114695	A	20041004		
US 20100092509	A1	20100415	WO 2004IB3366	A	20041004	201027	E
			US 2007574437	A	20070425		
AU 2008202708	B2	20100527	AU 2004278170	A	20041004	201039	NCE
			AU 2008202708	A	20080619		
EP 2267036	A1	20101229	EP 2004791697	A	20041004	201104	E
			EP 2010180746	A	20041004		

Priority Applications (no., kind, date): GB 200323103 A 20031002; AU 2008202708 A 20080619

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2005033148	A1	EN	42	6	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
EP 1678212 A1 EN PCT Application WO 2004IB3366
Based on OPI patent WO 2005033148
Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
MX 2006003729 A1 ES PCT Application WO 2004IB3366
Based on OPI patent WO 2005033148
AU 2004278170 A1 EN Based on OPI patent WO 2005033148
BR 200415048 A PT PCT Application WO 2004IB3366
Based on OPI patent WO 2005033148
JP 2007507578 W JA 42 PCT Application WO 2004IB3366
Based on OPI patent WO 2005033148
AU 2008202708 A1 EN Division of application AU 2004278170
AU 2004278170 B2 EN Based on OPI patent WO 2005033148
NZ 546668 A EN PCT Application WO 2004IB3366
Based on OPI patent WO 2005033148
RU 2362784 C2 RU PCT Application WO 2004IB3366

Based on OPI patent WO 2005033148

US 20100092509 A1 EN PCT Application WO 2004IB3366

AU 2008202708 B2 EN Division of application AU 2004278170

EP 2267036 A1 EN Division of application EP 2004791697

Division of patent EP 1678212

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

Alerting Abstract WO A1

NOVELTY - A modified serogroup W135 meningococcal ****capsular**** saccharide (I), where (a) <= 29% of the sialic acid residues in the saccharide are ortho-acetylated at the 7 position and (b)>= 26% of the sialic acid residues in the saccharide are ortho-acetylated at the 9 position.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

1.a modified serogroup Y meningococcal ****capsular**** saccharide (II), where <= 9% of the sialic acid residues in the saccharide are Ortho-acetylated at the 7 position and/or (b) >= 29% or <= 27% of the sialic acid residues in the saccharide are ortho-acetylated at the 9 position;

2.a modified meningococcal ****capsular**** saccharide (III), optionally conjugated to a carrier protein, where the saccharide comprises n or more repeating units of the disaccharide unit: [sialic acid]-[hexose];

3.a composition (C1) comprising (a1) molecules of serogroup W135 meningococcal ****capsular**** saccharide, where the average number of sialic acid residues per ****capsular**** saccharide molecule is (b1), and where <= 29% of the (a1xb1) serogroup W135 sialic acid residues in the composition are ortho-acetylated at the 7 position and/or 26% of the axb serogroup W135 sialic acid residues in the composition are ortho-acetylated at the 9 position;

4.a composition (C2) comprising (a2) molecules of serogroup Y meningococcal ****capsular**** saccharide, where the average number of sialic acid residues per ****capsular**** saccharide molecule is (b2), and where the average number of sialic acid residues per ****capsular**** saccharide molecule is (b2) and where <= 9% of the a2xb2 serogroup Y sialic acid residues in the composition are ortho-acetylated at the 7 position and/or >= 29% or <= 27% of the (a2)x(b2) serogroup Y sialic acid residues in the composition are ortho-acetylated at the 9 position;

5.a saccharide (S1) comprising n or more repeats of the disaccharide unit of formula (Ia);

6.a conjugation product of (S1) and a carrier protein selected from diphtheria toxoid, tetanus toxoid, H. influenzae protein D, and CRM197;

7.an immunogenic composition (III) comprising the modified ****capsular**** saccharides or conjugates and a carrier; and

8.preparation of an immunogenic conjugate involving providing a starting serogroup W135 or serogroup Y meningococcal ****capsular**** saccharide and a carrier protein, either or both of which is/are optionally modified to render it/them reactive towards the other, forming a covalent bond between the saccharide and the carrier protein and purifying the resulting glycoconjugates, where, between the first and

the third step, the degree of ortho-acetylation at the 9 position of sialic acid residues in the starting saccharide increases.

Provided that:

1.(a) >= x% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 7 position and/or (b) when hexose is galactose, greater than y% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 9 position, and when hexose is glucose, >= y% or >= z% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 9 position, where, when hexose is galactose, x is 29 and y is 26; and when hexose is glucose, x is 9, y is 29 and z is 27 (preferably when hexose is galactose, 6% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 7 position, and 43% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 9 position; and when hexose is glucose, 6% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 7 position, and 45% of the sialic acid residues in the n or more repeating units are ortho-acetylated at the 9 position); and

2.when X is OH and Y is H, <=29% of R 1 are COCH 3 and/or >= 26% of R 2 are COCH3; and when X is H and Y is OH, <= 9% of R 1 are COCH 3 and/or >= 29% or <= 27% of R 2 are COCH3.

ACTIVITY - Antibacterial.
MECHANISM OF ACTION - None given.
USE - In the preparation of an immunogenic composition useful as a medicament for raising an antibody response; as a medicament for protecting against meningococcal meningitis (all claimed).
ADVANTAGE - The conjugates show improved immunogenicity compared to native polysaccharides.

Technology Focus
ORGANIC CHEMISTRY - Preferred Composition: In (I) and (II), greater than 0% of the sialic acid residues in the saccharide are ortho-acetylated at the 7 and 9 position. In (C1) and (C2), the****capsular**** saccharide is conjugated to a protein carrier. In (S1), the saccharide has an average degree of polymerization of less than 30. (III) is in aqueous form or in lyophilized form.
BIOLOGY - Preferred Composition: (III) further comprises a ****capsular**** saccharide antigen from serogroup C or A of ~N. ****meningitidis**** ~ , an antigen from serogroup B of ~N. ****meningitidis**** ~ , a saccharide antigen from ~Haemophilus influenzae type B ~ , an antigen from ~Streptococcus pneumoniae ~ , an antigen from hepatitis A virus, an antigen from hepatitis B virus, an antigen from ~Bordetella pertussis ~ , a diphtheria toxoid, a tetanus toxoid and/or a poliovirus antigen. The serogroup A is an antigen.
Title Terms/Index Terms/Additional Words: MODIFIED; MENINGOCOCCUS; CAPSULE; SACCHARIDE; USEFUL; PREPARATION; IMMUNOGENIC; COMPOSITION; ALTER; LEVEL; ORTHO; ACETYLATE; SPECIFIED; POSITION; SIALIC; ACID; RESIDUE

Class Codes
International Classification (Main): C08B-037/00
(Additional/Secondary): A61K-031/715, A61K-039/095
International Classification (+ Attributes)

IPC	+	Level	Value	Position	Status	Version
A61K-0031/715	A	I	F	B		20060101
A61K-0031/715	A	I		B		20060101
A61K-0031/715	A	I		R		20060101
A61K-0039/05	A	I	L	B		20060101
A61K-0039/08	A	I	L	B		20060101
A61K-0039/09	A	I	L	B		20060101
A61K-0039/095	A	I	F	B		20060101
A61K-0039/095	A	I		B		20060101
A61K-0039/095	A	I		R		20060101
A61K-0039/10	A	I	L	B		20060101
A61K-0039/102	A	I	L	B		20060101
A61K-0039/116	A	I	L	B		20060101
A61K-0039/13	A	I	L	B		20060101
A61K-0039/29	A	I	L	B		20060101
A61K-0039/385	A	I	F	B		20060101
A61P-0001/16	A	I	L	B		20060101
A61P-0031/04	A	I	L	B		20060101
A61P-0031/14	A	I	L	B		20060101
A61P-0031/20	A	I	L	B		20060101
A61P-0037/04	A	I	L	B		20060101
C07H-0001/00	A	I	L	B		20060101
C07K-0014/22	A	I	L	B		20060101
C07K-0014/22	A	N	L	B		20060101
C08B-0037/00	A	I	L	B		20060101
C08B-0037/00	A	I		B		20060101
C08B-0037/00	A	I		R		20060101
C12N-0015/09	A	N	L	B		20060101
A61K-0031/715	A	I	L	B		20060101
A61K-0039/095	A	I	L	B		20060101
C08B-0037/00	A	I	F	B		20060101
A61K-0031/715	C	I	L	B		20060101
A61K-0031/715	C	I		R		20060101
A61K-0039/05	C	I	L	B		20060101
A61K-0039/08	C	I	L	B		20060101
A61K-0039/09	C	I	L	B		20060101
A61K-0039/095	C	I		R		20060101
A61K-0039/10	C	I	L	B		20060101
A61K-0039/102	C	I	L	B		20060101
A61K-0039/116	C	I	L	B		20100101
A61K-0039/125	C	I	L	B		20060101
A61K-0039/29	C	I	L	B		20060101
A61K-0039/385	C	I	F	B		20100101
A61P-0001/00	C	I	L	B		20060101
A61P-0037/00	C	I	L	B		20060101
C07H-0001/00	C	I	L	B		20100101
C07K-0014/195	C	I	L	B		20100101
C07K-0014/195	C	N	L	B		20060101
C08B-0037/00	C	I	F	B		20060101
C08B-0037/00	C	I		R		20060101
C12N-0015/09	C	N	L	B		20060101
A61K-0031/715	C	I	F	B		20100101
A61K-0031/715	C	I		B		20060101
A61K-0039/095	C	I	L	B		20100101
A61K-0039/095	C	I		B		20060101
A61P-0031/00	C	I	L	B		20100101
C08B-0037/00	C	I	L	B		20100101

C08B-0037/00 C I B 20060101
ECLA: A61K-031/715, A61K-039/095, C08B-037/00P
ICO: K61K-039:60P10
US Classification, Current Main: 424-197110; Secondary: 424-203100, 424-250100, 530-395000, 536-123100
US Classification, Issued: 424197.11, 536123.1, 530395, 424250.1, 424203.1

JP Classification

FI Term	Facet	Rank	Type
A61K-031/715			
A61K-039/05			
A61K-039/08			
A61K-039/09			
A61K-039/095			
A61K-039/10			
A61K-039/102			
A61K-039/13			
A61K-039/29			
A61P-001/16			
A61P-031/04			
A61P-031/14			
A61P-031/20			
A61P-037/04			
C07K-014/22			
C08B-037/00		G	
C08B-037/00		P	ZNA
C12N-015/00		A	

F-Term Theme	View Point + Figure	Additional Code
4B024		
4C085		
4C086		
4C090		
4C201		
4H045		
4B024	AA01	
4C086	AA01	
4C086	AA02	
4C090	AA02	
4C085	AA03	
4C086	AA03	
4C085	AA04	
4C085	AA05	
4C090	AA09	
4H045	AA11	
4H045	AA20	
4H045	AA30	
4C085	BA10	
4H045	BA10	
4C085	BA12	
4C085	BA16	
4C085	BA17	
4C085	BA18	
4B024	BA31	
4C085	BA38	
4H045	BA41	
4C085	BA53	
4C085	BA88	
4C085	BA89	
4C090	BA94	
4C085	BB11	

4C090 BB11
4C090 BB25
4C090 BC25
4C090 BD36
4C090 BD41
4B024 CA02
4B024 CA07
4H045 CA11
4C090 CA39
4C090 CA46
4C085 CC07
4C085 CC08
4B024 DA05
4C090 DA09
4C090 DA23
4H045 DA86
4B024 EA04
4H045 EA22
4C086 EA25
4H045 EA29
4H045 EA31
4H045 FA74
4B024 GA11
4C086 GA17
4C085 GG01
4C085 GG03
4C085 GG08
4C085 GG10
4B024 HA03
4C086 MA01
4C086 MA02
4C086 MA04
4C086 NA14
4C086 ZA75
4C086 ZB09
4C086 ZB33
4C086 ZB35

File Segment: CPI
DWPI Class: A11; A96; B03; B04
Manual Codes (CPI/A-M): A03-A01; A10-E01; A12-V01; B04-C02; B14-A01A5; B14-G01

Original Publication Data by Authority

Australia
Publication No. AU 2004278170 A1 (Update 200681 E)
Publication Date: 20050414
Assignee: CHIRON SRL (CHIR)
Inventor: COSTANTINO P
Language: EN
Application: AU 2004278170 A 20041004 (Local application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: A61K-31/715(B,I,M,EP,20060101,20060408,A,L)
A61K-39/095(B,I,M,EP,20060101,20060408,A,F)
C08B-37/00(B,I,M,EP,20060101,20060408,A,L)
Current IPC: A61K-31/715(B,I,M,EP,20060101,20060408,A,L)
A61K-39/095(B,I,M,EP,20060101,20060408,A,F)
C08B-37/00(B,I,M,EP,20060101,20060408,A,L)

Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

Publication No. AU 2004278170 B2 (Update 200867 E)
Publication Date: 20080703
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: EN
Application: AU 2004278170 A 20041004 (Local application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: A61K-31/715(B,I,M,EP,20060101,20051008,A,F)
    A61K-31/715(B,I,M,98,20060101,20051008,C)
    A61K-39/095(B,I,M,EP,20060101,20051008,A,L)
    A61K-39/095(B,I,M,98,20060101,20051008,C)
    C08B-37/00(B,I,M,EP,20060101,20051008,A,L)
    C08B-37/00(B,I,M,98,20060101,20051008,C)
Current IPC: A61K-31/715(B,I,M,EP,20060101,20051008,A,F)
    A61K-31/715(B,I,M,EP,20060101,20051008,C,F)
    A61K-39/095(B,I,M,EP,20060101,20051008,A,L)
    A61K-39/095(B,I,M,EP,20060101,20051008,C,L)
    C08B-37/00(B,I,M,EP,20060101,20051008,A,L)
    C08B-37/00(B,I,M,EP,20060101,20051008,C,L)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

Publication No. AU 2008202708 A1 (Update 200864 NCE)
Publication Date: 20080710
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: EN
Application: AU 2004278170 A 20041004 (Division of application)
  AU 2008202708 A 20080619 (Local application)
Priority: AU 2008202708 A 20080619 (Local application)
Original IPC: A61K-31/715(B,I,M,AU,20060101,20080624,A,F)
    A61K-31/715(B,I,M,98,20060101,20080624,C)
    A61K-39/095(B,I,M,AU,20060101,20080624,A,L)
    A61K-39/095(B,I,M,98,20060101,20080624,C)
    C08B-37/00(B,I,M,AU,20060101,20080624,A,L)
    C08B-37/00(B,I,M,98,20060101,20080624,C,L)
Current IPC: A61K-31/715(B,I,M,AU,20060101,20080624,A,F)
    A61K-31/715(B,I,M,AU,20060101,20080624,C,F)
    A61K-39/095(B,I,M,AU,20060101,20080624,A,L)
    A61K-39/095(B,I,M,AU,20060101,20080624,C,L)
    C08B-37/00(B,I,M,AU,20060101,20080624,A,L)
    C08B-37/00(B,I,M,AU,20060101,20080624,C,L)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

Publication No. AU 2008202708 B2 (Update 201039 NCE)
Publication Date: 20100527
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: BERTI F
  COSTANTINO P
Language: EN
Application: AU 2008202708 A 20080619 (Local application)
  AU 2004278170 A 20041004 (Division of application)
Priority: AU 2008202708 A 20080619 (Local application)
Original IPC: A61K-31/715(B,I,M,AU,20060101,20080624,A,F)
    A61K-31/715(B,I,M,98,20060101,20080624,C)
    A61K-39/095(B,I,M,AU,20060101,20080624,A,L)
    A61K-39/095(B,I,M,98,20060101,20080624,C)

C08B-37/00(B,I,M,AU,20060101,20080624,A,L)
C08B-37/00(B,I,M,98,20060101,20080624,C)
Current IPC: A61K-31/715(B,I,M,AU,20060101,20080624,A,F)
A61K-31/715(B,I,M,AU,20100101,20080624,C,F)
A61K-39/095(B,I,M,AU,20060101,20080624,A,L)
A61K-39/095(B,I,M,AU,20100101,20080624,C,L)
C08B-37/00(B,I,M,AU,20060101,20080624,A,L)
C08B-37/00(B,I,M,AU,20100101,20080624,C,L)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

Brazil
Publication No. BR 200415048 A (Update 200701 E)
Publication Date: 20061212
Assignee: CHIRON SRL (CHIR)
Inventor: COSTANTINO P
Language: PT
Application: BR 200415048 A 20041004 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: C08B-37/00(A) A61K-31/715(B) A61K-39/095(B)
Current IPC: C08B-37/00(A) A61K-31/715(B) A61K-39/095(B)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

China
Publication No. CN 1882612 A (Update 200730 E)
Publication Date: 20061220
Language: ZH
Application: CN 200480034525 A 20041004 (Local application)
Priority: GB 200323103 A 20031002
Original IPC: A61K-31/715(I,CN,20060101,A,L) A61K-31/715(I,M,98,20060101,C)
A61K-39/095(I,CN,20060101,A,L) A61K-39/095(I,M,98,20060101,C)
C08B-37/00(I,CN,20060101,A,F) C08B-37/00(I,M,98,20060101,C)
Current IPC: A61K-31/715(B,I,H,CN,20060101,20061220,A,L)
A61K-31/715(B,I,H,CN,20060101,20061220,C,L)
A61K-39/095(B,I,H,CN,20060101,20061220,A,L)
A61K-39/095(B,I,H,CN,20060101,20061220,C,L)
C08B-37/00(B,I,H,CN,20060101,20061220,A,F)
C08B-37/00(B,I,H,CN,20060101,20061220,C,F)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

EPO
Publication No. EP 1678212 A1 (Update 200648 E)
Publication Date: 20060712
**HYPO- UND HYPERACETYLIERTE MENINGOKOKKEN-KAPSELSACCHARIDE
HYPO- AND HYPER-ACETYLATED MENINGOCOCCAL CAPSULAR SACCHARIDES
SACCHARIDES CAPSULAIRES MENINGOCOCCIQUES HYPO ET HYPERACETYLES**
Assignee: Chiron SRL., Via Fiorentina, 1, 53100 Siena, IT
Inventor: COSTANTINO, Paolo, Chiron SRL, Via Fiorentina 1, I-53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 2004791697 A 20041004 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

Original IPC: A61K-31/715(B,I,H,EP,19850101,20050415,A,L)
A61K-39/095(B,I,H,EP,19850101,20050415,A,L)
C08B-37/00(B,I,H,EP,19740701,20050415,A,F)
Current IPC: A61K-31/715(B,I,H,EP,19850101,20050415,A,L)
A61K-39/095(B,I,H,EP,19850101,20050415,A,L)
C08B-37/00(B,I,H,EP,19740701,20050415,A,F)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10
Original Abstract: Capsular saccharides derived from serogroups W135 and Y of ~Neisseria meningitidis~ have altered levels of O-acetylation at the 7 and 9 positions of their sialic acid residues, and can be used to make immunogenic compositions. Relative to unmodifed native saccharides, derivatives of the invention are preferentially selected during conjugation to carrier proteins, and conjugates of the derivatives show improved immunogenicity compared to native polysaccharides.
Publication No. EP 2267036 A1 (Update 201104 E)
Publication Date: 20101229
**Hypo- und hyperacetylierte Kapselsaccharide aus Meningokokken
Hypo- and Hyper-Acetylated Meningococcal Capsular Saccharides
Saccharides capsulaires de meningococcie hypo et hyperacetyles**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT (NOVS)
Inventor: Costantino, Paolo, Novartis Vaccines and Diagnostics S.r.l., Via Fiore, I-53100, Siena, IT
Berti, Francesco, Novartis Vaccines and Diagnostics S.r.l., Via Fiore, I-53100, Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, One Southampton Row, London, WC1B 5HA, GB
Language: EN
Application: EP 2010180746 A 20041004 (Local application)
EP 2004791697 A 20041004 (Division of application)
Priority: GB 200323103 A 20031002
Related Publication: EP 1678212 A (Division of patent)
Designated States: (Regional Original) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Original IPC: A61K-31/715(B,I,H,EP,20060101,20101109,A,L)
A61K-31/715(B,I,M,98,20060101,20101109,C)
A61K-39/095(B,I,H,EP,20060101,20101109,A,L)
A61K-39/095(B,I,M,98,20060101,20101109,C)
C08B-37/00(B,I,H,EP,20060101,20101109,A,F)
C08B-37/00(B,I,M,98,20060101,20101109,C)
Current IPC: A61K-31/715(B,I,H,EP,20060101,20101109,A,L)
A61K-31/715(B,I,M,98,20060101,20101109,C)
A61K-39/095(B,I,H,EP,20060101,20101109,A,L)
A61K-39/095(B,I,M,98,20060101,20101109,C)
C08B-37/00(B,I,H,EP,20060101,20101109,A,F)
C08B-37/00(B,I,M,98,20060101,20101109,C)
Original Abstract: Capsular saccharides derived from serogroups W135 and Y of Neisseria meningitidis have altered levels of O-acetylation at the 7 and 9 positions of their sialic acid residues, and can be used to make immunogenic compositions. Relative to unmodified native saccharides, derivatives of the invention are preferentially selected during conjugation to carrier proteins, and conjugates of the derivatives show improved immunogenicity compared to native polysaccharides.
Claim:

1. A modified saccharide, wherein:

* i) the saccharide is a modified serogroup W135 meningococcal capsular saccharide wherein (a) <= 29% of the sialic acid residues in the saccharide are O-acetylated at the 7 position; and/or (b) >= 26% of the sialic acid residues in the saccharide are O-acetylated at

the 9 position; or

* ii) the saccharide is a modified serogroup Y meningococcal capsular saccharide, wherein (a) <= 9% of the sialic acid residues in the saccharide are O-acetylated at the 7 position; and/or (b) >= 29% or <= 27% of the sialic acid residues in the saccharide are O-acetylated at the 9 position.

Japan
Publication No. JP 2007507578 W (Update 200725 E)
Publication Date: 20070329
Language: JA (42 pages)
Application: JP 2006530760 A 20041004 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: A61K-31/715(B,I,H,JP,20060101,20070302,A,L)
A61K-31/715(B,I,M,98,20060101,20070302,C)
A61K-39/05(B,I,H,JP,20060101,20070302,A,L)
A61K-39/05(B,I,M,98,20060101,20070302,C)
A61K-39/08(B,I,H,JP,20060101,20070302,A,L)
A61K-39/08(B,I,M,98,20060101,20070302,C)
A61K-39/09(B,I,H,JP,20060101,20070302,A,L)
A61K-39/09(B,I,M,98,20060101,20070302,C)
A61K-39/095(B,I,H,JP,20060101,20070302,A,L)
A61K-39/095(B,I,M,98,20060101,20070302,C)
A61K-39/10(B,I,H,JP,20060101,20070302,A,L)
A61K-39/10(B,I,M,98,20060101,20070302,C)
A61K-39/102(B,I,H,JP,20060101,20070302,A,L)
A61K-39/102(B,I,M,98,20060101,20070302,C)
A61K-39/125(B,I,M,98,20060101,20070302,C)
A61K-39/13(B,I,H,JP,20060101,20070302,A,L)
A61K-39/29(B,I,H,JP,20060101,20070302,A,L)
A61K-39/29(B,I,M,98,20060101,20070302,C)
A61P-1/00(B,I,M,98,20060101,20070302,C)
A61P-1/16(B,I,H,JP,20060101,20070302,A,L)
A61P-31/00(B,I,M,98,20060101,20070302,C)
A61P-31/04(B,I,H,JP,20060101,20070302,A,L)
A61P-31/14(B,I,H,JP,20060101,20070302,A,L)
A61P-31/20(B,I,H,JP,20060101,20070302,A,L)
A61P-37/00(B,I,M,98,20060101,20070302,C)
A61P-37/04(B,I,H,JP,20060101,20070302,A,L)
C08B-37/00(B,I,H,JP,20060101,20070302,A,F)
C08B-37/00(B,I,M,98,20060101,20070302,C)
Current IPC: A61K-31/715(B,I,H,JP,20060101,20070302,A,L)
A61K-31/715(B,I,H,JP,20060101,20070302,C,L)
A61K-39/05(B,I,H,JP,20060101,20070302,A,L)
A61K-39/05(B,I,H,JP,20060101,20070302,C,L)
A61K-39/08(B,I,H,JP,20060101,20070302,A,L)
A61K-39/08(B,I,H,JP,20060101,20070302,C,L)
A61K-39/09(B,I,H,JP,20060101,20070302,A,L)
A61K-39/09(B,I,H,JP,20060101,20070302,C,L)
A61K-39/095(B,I,H,JP,20060101,20070302,A,L)
A61K-39/095(B,I,H,JP,20060101,20070302,C,L)
A61K-39/10(B,I,H,JP,20060101,20070302,A,L)
A61K-39/10(B,I,H,JP,20060101,20070302,C,L)
A61K-39/102(B,I,H,JP,20060101,20070302,A,L)
A61K-39/102(B,I,H,JP,20060101,20070302,C,L)
A61K-39/125(B,I,H,JP,20060101,20070302,C,L)
A61K-39/13(B,I,H,JP,20060101,20070302,A,L)
A61K-39/29(B,I,H,JP,20060101,20070302,A,L)

A61K-39/29(B,I,H,JP,20060101,20070302,C,L)
A61P-1/00(B,I,H,JP,20060101,20070302,C,L)
A61P-1/16(B,I,H,JP,20060101,20070302,A,L)
A61P-31/00(B,I,H,JP,20060101,20070302,C,L)
A61P-31/04(B,I,H,JP,20060101,20070302,A,L)
A61P-31/14(B,I,H,JP,20060101,20070302,A,L)
A61P-31/20(B,I,H,JP,20060101,20070302,A,L)
A61P-37/00(B,I,H,JP,20060101,20070302,C,L)
A61P-37/04(B,I,H,JP,20060101,20070302,A,L)
C07K-14/195(B,N,H,JP,20060101,20070302,C,L)
C07K-14/22(B,N,H,JP,20060101,20070302,A,L)
C08B-37/00(B,I,H,JP,20060101,20070302,A,F)
C08B-37/00(B,I,H,JP,20060101,20070302,C,F)
C12N-15/09(B,N,H,JP,20060101,20070302,A,L)
C12N-15/09(B,N,H,JP,20060101,20070302,C,L)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10
Current JP F-Terms: 4B024 4C085 4C086 4C090 4C201 4H045 4B024AA01 4C086AA01
4C086AA02 4C090AA02 4C085AA03 4C086AA03 4C085AA04 4C085AA05 4C090AA09
4H045AA11 4H045AA20 4H045AA30 4C085BA10 4H045BA10 4C085BA12 4C085BA16
4C085BA17 4C085BA18 4B024BA31 4C085BA38 4H045BA41 4C085BA53 4C085BA88
4C085BA89 4C090BA94 4C085BB11 4C090BB11 4C090BB25 4C090BC25 4C090BD36
4C090BD41 4B024CA02 4B024CA07 4H045CA11 4C090CA39 4C090CA46 4C085CC07
4C085CC08 4B024DA05 4C090DA09 4C090DA23 4H045DA86 4B024EA04 4H045EA22
4C086EA25 4H045EA29 4H045EA31 4H045FA74 4B024GA11 4C086GA17 4C085GG01
4C085GG03 4C085GG08 4C085GG10 4B024HA03 4C086MA01 4C086MA02 4C086MA04
4C086NA14 4C086ZA75 4C086ZB09 4C086ZB33 4C086ZB35

Mexico
Publication No. MX 2006003729 A1 (Update 200677 E)
Publication Date: 20060701
Assignee: CHIRON SRL (CHIR)
Inventor: COSTANTINO P
Language: ES
Application: MX 20063729 A 20060403 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: A61K-31/715(A) A61K-39/095(B) C08B-37/00(B)
Current IPC: A61K-31/715(B,A,I,H,MX,20060101,20060623,A,F)
A61K-31/715(B,I,H,MX,20060101,20060623,C,F)
A61K-39/095(B,I,H,MX,20060101,20060623,A,L)
A61K-39/095(B,I,H,MX,20060101,20060623,C,L)
C08B-37/00(B,I,H,MX,20060101,20060623,A,L)
C08B-37/00(B,I,H,MX,20060101,20060623,C,L)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

New Zealand
Publication No. NZ 546668 A (Update 200946 E)
Publication Date: 20090626
Assignee: NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: COSTANTINO P
Language: EN
Application: NZ 546668 A 20041004 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: A61K-31/715(A) A61K-39/095(B) C08B-37/00(B)
Current IPC: A61K-31/715(R,A,I,M,EP,20060101,20051008,A)
A61K-31/715(R,I,M,EP,20060101,20051008,C)
A61K-39/095(R,I,M,EP,20060101,20051008,A)

A61K-39/095(R,I,M,EP,20060101,20051008,C)
C08B-37/00(R,I,M,EP,20060101,20051008,A)
C08B-37/00(R,I,M,EP,20060101,20051008,C)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10

Russia
Publication No. RU 2362784 C2 (Update 200950 E)
Publication Date: 20090727
Hypo- and hyperacetilated meningococcal capsular saccharides
Assignee: CHIRON SRL; IT (CHIR)
Language: RU
Application: RU 2006114695 A 20041004 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002
Related Publication: WO 2005033148 A (Based on OPI patent)
Original IPC: A61K-31/715(B,I,H,RU,20060101,20090331,A,L)
A61K-31/715(B,I,M,98,20060101,20090331,C)
A61K-39/095(B,I,H,RU,20060101,20090331,A,L)
A61K-39/095(B,I,M,98,20060101,20090331,C)
C08B-37/00(B,I,H,RU,20060101,20090331,A,F)
C08B-37/00(B,I,M,98,20060101,20090331,C)
Current IPC: A61K-31/715(B,I,H,RU,20060101,20090909,A)
A61K-31/715(B,I,H,RU,20090101,20090909,C)
A61K-39/095(B,I,H,RU,20060101,20090909,A)
A61K-39/095(B,I,H,RU,20090101,20090909,C)
C08B-37/00(B,I,H,RU,20060101,20090909,A)
C08B-37/00(B,I,H,RU,20090101,20090909,C)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10
Original Abstract: FIELD: chemistry. SUBSTANCE: capsular saccharides, obtained from serogroups W135 and Y Neisseria meningitidis, have changed levels of O-acetylation in positions 7 and 9 of their sialic acid residues. Modified meningococcal capsular saccharide of serogroup W135, where (a) <=29% of sialic acid residues in saccharide are O-acetylated in position 7; and/or (b) >=26% of sialic acid residues in saccharide are O-acetylated in position 9 and modified meningococcal capsular saccharide of serogroup Y, where a) (much less than)9% of sialic acid residues in saccharide are O-acetylated in position 7; and/or (b) >=29% or <=27% of sialic acid residues in saccharide are O-acetylated in position 9, can be used for creation of immunogenic compositions - compositions for inducing formation of antibodies in mammals and products of conjugation with carrier-proteins. Conjugates of derivatives demonstrate higher immunogenity in comparison to natural polysaccharides.EFFECT: obtaining capsular saccharides which demonstrate higher immunogenity in comparison to natural polysaccharides.29 cl, 6 dwg

United States
Publication No. US 20100092509 A1 (Update 201027 E)
Publication Date: 20100415
Hypo- and Hyper- Acetylated Meningococcal Capsular Saccharides
Assignee: Costantino, Paolo, Siena, IT Residence: IT (COST-I)
Berti, Francesco, Siena, IT Residence: IT (BERT-I)
Inventor: Berti, Francesco, Siena, IT Residence: IT
Costantino, Paolo, Siena, IT Residence: IT
Agent: NOVARTIS VACCINES AND DIAGNOSTICS INC., INTELLECTUAL PROPERTY-
X100B, P.O. BOX 8097, Emeryville, CA, US
Language: EN
Application: US 2007574437 A 20070425 (Local application)
WO 2004IB3366 A 20041004 (PCT Application)
Priority: GB 200323103 A 20031002

Original IPC: A61K-39/095(B,I,H,US,20060101,20100415,A,L)
A61K-39/095(B,I,M,98,20060101,20100415,C)
A61K-39/116(B,I,H,US,20060101,20100415,A,L)
A61K-39/116(B,I,M,98,20060101,20100415,C)
A61K-39/385(B,I,H,US,20060101,20100415,A,F)
A61K-39/385(B,I,M,98,20060101,20100415,C)
A61P-31/00(B,I,M,98,20060101,20100415,C)
A61P-31/04(B,I,H,US,20060101,20100415,A,L)
C07H-1/00(B,I,H,US,20060101,20100415,A,L)
C07H-1/00(B,I,M,98,20060101,20100415,C)
C07K-14/195(B,I,M,98,20060101,20100415,C)
C07K-14/22(B,I,H,US,20060101,20100415,A,L)
Current IPC: A61K-31/715(R,I,M,EP,20060101,20051008,A)
A61K-31/715(R,I,M,EP,20060101,20051008,C)
A61K-39/095(B,I,H,US,20060101,20100415,A,L)
A61K-39/095(B,I,H,US,20100101,20100415,C,L)
A61K-39/116(B,I,H,US,20060101,20100415,A,L)
A61K-39/116(B,I,H,US,20100101,20100415,C,L)
A61K-39/385(B,I,H,US,20060101,20100415,A,F)
A61K-39/385(B,I,H,US,20100101,20100415,C,F)
A61P-31/00(B,I,H,US,20100101,20100415,C,L)
A61P-31/04(B,I,H,US,20060101,20100415,A,L)
C07H-1/00(B,I,H,US,20060101,20100415,A,L)
C07H-1/00(B,I,H,US,20100101,20100415,C,L)
C07K-14/195(B,I,H,US,20100101,20100415,C,L)
C07K-14/22(B,I,H,US,20060101,20100415,A,L)
C08B-37/00(R,I,M,EP,20060101,20051008,A)
C08B-37/00(R,I,M,EP,20060101,20051008,C)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10
Current US Class (main): 424-197110
Current US Class (secondary): 424-203100 424-250100 530-395000 536-123100
Original US Class (main): 424197.11
Original US Class (secondary): 536123.1 530395 424250.1 424203.1
Original Abstract: Capsular saccharides derived from serogroups W135 and Y of ~Neisseria meningitidis~ have altered levels of O-acetylation at the 7 and 9 positions of their sialic acid residues, and can be used to make immunogenic compositions. Relative to unmodifed native saccharides, derivatives of the invention are preferentially selected during conjugation to carrier proteins, and conjugates of the derivatives show improved immunogenicity compared to native polysaccharides.
Claim:
1.
1. A modified serogroup W135 meningococcal capsular saccharide, wherein: (a) >=29% of the sialic acid residues in the saccharide are O-acetylated at the 7 position; and/or (b) <=26% of the sialic acid residues in the saccharide are O-acetylated at the 9 position.

WIPO
Publication No. WO 2005033148 A1 (Update 200533 B)
Publication Date: 20050414
**HYPO- AND HYPER-ACETYLATED MENINGOCOCCAL CAPSULAR SACCHARIDES
SACCHARIDES CAPSULAIRES MENINGOCOCCIQUES HYPO ET HYPERACETYLES**
Assignee: ~(except US)~ CHIRON SRL, Vie Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT (CHIR)
~(only US)~ COSTANTINO, Paolo, Chiron SRL, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Inventor: COSTANTINO, Paolo, Chiron SRL, Via Fiorentina 1, I-53100 Siena, IT Residence: IT Nationality: IT
Agent: MARSHALL, Cameron, John, Carpmaels Ransford, 43-45 Bloomsbury

Square, London WC1A 2RA, GB
Language: EN (42 pages, 6 drawings)
Application: WO 2004IB3366 A 20041004 (Local application)
Priority: GB 200323103 A 20031002
Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: C08B-37/00(A) A61K-31/715(B) A61K-39/095(B)
Current IPC: A61K-31/715(R,A,I,M,EP,20060101,20051008,A)
A61K-31/715(R,I,M,EP,20060101,20051008,C)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
C08B-37/00(R,I,M,EP,20060101,20051008,A)
C08B-37/00(R,I,M,EP,20060101,20051008,C)
Current ECLA class: A61K-31/715 A61K-39/095 C08B-37/00P
Current ECLA ICO class: K61K-39:60P10
Original Abstract: Capsular saccharides derived from serogroups W135 and Y of ~Neisseria meningitidis~ have altered levels of O-acetylation at the 7 and 9 positions of their sialic acid residues, and can be used to make immunogenic compositions. Relative to unmodifed native saccharides, derivatives of the invention are preferentially selected during conjugation to carrier proteins, and conjugates of the derivatives show improved immunogenicity compared to native polysaccharides.
L'invention concerne des saccharides capsulaires derives des serogroupes W135 et Y de ~Neisseria meningitidis~ et presentant des taux modifies d'acetylation en ortho au niveau des sites 7 et 9 de leurs residus d'acide sialique, et pouvant etre utilises pour fabriquer des compositions immunogenes. Par rapport aux saccharides natifs non modifies, les derives decrits sont de preference selectionnes lorsqu'ils sont conjugues a des proteines vectrices, et des conjugues de ces derives presentent une immunogenicite amelioree par rapport aux polysaccharides natifs.

10/7/15 (Item 15 from file: 351)
DIALOG(R)File 351:Derwent WPI

0007899642
WPI ACC NO: 1996-251554/199625
XRAM Acc No: C1996-079594
Combined vaccine against meningitis contg. oligosaccharide conjugates - of Haemophilus influenzae and ****Neisseria**** ****meningitidis**** serotype C.
Patent Assignee: CHIRON SPA (CHIR); CHIRON SRL (CHIR); NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS); BIOCINE SPA (BIOC-N); NOVARTIS VACCINES&DIAGNOSTICS INC (NOVS)
Inventor: CECCARINI C; COSTANTINO P; D'ASCENZI S; DASCENZI S; GIANNOZZI A; NORELLI F; GIANOZZI A
Patent Family (16 patents, 20 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 1996014086	A1	19960517	WO 1995IB1006	A	19951102	199625	B
EP 789587	A1	19970820	EP 1995935550	A	19951102	199738	E
			WO 1995IB1006	A	19951102		
JP 10509701	W	19980922	WO 1995IB1006	A	19951102	199848	E

				JP 1996515175	A	19951102		
US 6251401	B1	20010626		WO 1995IB1006	A	19951102	200138	E
				US 1997836080	A	19970501		
EP 1312377	A2	20030521		EP 1995935550	A	19951102	200334	E
				EP 200375069	A	19951102		
EP 789587	B1	20030813		EP 1995935550	A	19951102	200355	E
				WO 1995IB1006	A	19951102		
				EP 200375069	A	19951102		
DE 69531501	E	20030918		DE 69531501	A	19951102	200369	E
				EP 1995935550	A	19951102		
				WO 1995IB1006	A	19951102		
ES 2204967	T3	20040501		EP 1995935550	A	19951102	200431	E
JP 2007169302	A	20070705		JP 1996515175	A	19951102	200746	E
				JP 200783117	A	20070327		
JP 3989951	B2	20071010		WO 1995IB1006	A	19951102	200768	E
				JP 1996515175	A	19951102		
EP 789587	B2	20080402		EP 1995935550	A	19951102	200825	E
				WO 1995IB1006	A	19951102		
				EP 200375069	A	20030110		
CA 2204277	C	20100202		CA 2204277	A	19951102	201011	E
				WO 1995IB1006	A	19951102		
CA 2689871	A1	19960517		CA 2204277	A	19951102	201019	E
				CA 2689871	A	19951102		
EP 2204185	A1	20100707		EP 1995935550	A	19951102	201045	E
				EP 200375069	A	20030110		
				EP 201075114	A	19951102		
EP 2204185	A8	20101027		EP 1995935550	A	19951102	201071	E
				EP 200375069	A	20030110		
				EP 201075114	A	19951102		
JP 2011016850	A	20110127		JP 200783117	A	19951102	201108	E
				JP 2010236921	A	20101021		

Priority Applications (no., kind, date): GB 199422096 A 19941102

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 1996014086	A1	EN	32	6	

National Designated States,Original: CA JP US

Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

EP 789587	A1	EN		PCT Application WO 1995IB1006 Based on OPI patent WO 1996014086

Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

JP 10509701	W	JA	30	PCT Application WO 1995IB1006 Based on OPI patent WO 1996014086
US 6251401	B1	EN		PCT Application WO 1995IB1006 Based on OPI patent WO 1996014086
EP 1312377	A2	EN		Division of application EP 1995935550 Division of patent EP 789587

Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

EP 789587	B1	EN		PCT Application WO 1995IB1006 Related to application EP 200375069 Related to patent EP 1312377 Based on OPI patent WO 1996014086

Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DE 69531501	E	DE		Application EP 1995935550 PCT Application WO 1995IB1006 Based on OPI patent EP 789587

				Based on OPI patent WO 1996014086
ES 2204967	T3	ES		Application EP 1995935550
				Based on OPI patent EP 789587
JP 2007169302	A	JA	16	Division of application JP 1996515175
JP 3989951	B2	JA	15	PCT Application WO 1995IB1006
				Previously issued patent JP 10509701
				Based on OPI patent WO 1996014086
EP 789587	B2	EN		PCT Application WO 1995IB1006
				Related to application EP 200375069
				Related to patent EP 1312377
				Based on OPI patent WO 1996014086
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE				
CA 2204277	C	EN		PCT Application WO 1995IB1006
				Based on OPI patent WO 1996014086
CA 2689871	A1	EN		Division of application CA 2204277
EP 2204185	A1	EN		Division of application EP 1995935550
				Division of application EP 200375069
				Division of patent EP 1312377
				Division of patent EP 789587
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE				
EP 2204185	A8	EN		Division of application EP 1995935550
				Division of application EP 200375069
				Division of patent EP 1312377
				Division of patent EP 789587
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE				
JP 2011016850	A	JA	16	Division of application JP 200783117

Alerting Abstract WO A1

Combined meningitis vaccine comprises Hib (Haemophilus influenzae type b) and MenC (****Neisseria**** ****meningitidis**** serotype C) oligosaccharide conjugates (OC), opt. also a MenB OC. Also new are Hib. MenC and opt. MenB OC for simultaneous, separate or sequential admin..

USE - The vaccines are used to treat or prevent bacterial meningitis. Admin is at a rate of 2-10 mug per dose, given intramuscularly at 2, 4 and 6 months of age.

ADVANTAGE - The vaccine protects against both major causes of bacterial meningitis in a single compsn.. It is inexpensive and safer with no interaction between the different antigens.

Title Terms/Index Terms/Additional Words: COMBINATION; VACCINE; MENINGITIS; CONTAIN; OLIGOSACCHARIDE; CONJUGATE; HAEMOPHILUS; INFLUENZAE; ****NEISSERIA****; ****MENINGITIDIS****; SEROLOGICAL

Class Codes
International Classification (Main): A61K-039/02
(Additional/Secondary): A61K-039/095, A61K-039/102
International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
A61K-0039/02	A	I	F	B 20060101
A61K-0039/02	A	I	L	B 20060101
A61K-0039/095	A	I	F	B 20060101
A61K-0039/095	A	I	L	B 20060101

A61K-0039/095	A	I	L	R	20060101
A61K-0039/102	A	I		R	20060101
A61K-0039/102	A	I	F	B	20060101
A61K-0039/102	A	I	L	B	20060101
A61K-0039/102	A	I	L	R	20060101
A61K-0039/116	A	I		R	20060101
A61K-0039/116	A	I	F	B	20060101
A61K-0039/116	A	I	L	B	20060101
A61K-0047/48	A	I	F	R	20060101
A61P-0031/04	A	I	L	B	20060101
A61P-0037/04	A	I	L	B	20060101
C07K-0014/195	A	I	L	B	20060101
C07K-0014/195	A	I	L	R	20060101
A61K-0039/02	C	I		B	20060101
A61K-0039/02	C	I	F	B	20100101
A61K-0039/02	C	I	L	B	20100101
A61K-0039/095	C	I		B	20060101
A61K-0039/095	C	I	F	B	20100101
A61K-0039/095	C	I	L	B	20100101
A61K-0039/095	C	I	L	R	20060101
A61K-0039/102	C	I		B	20060101
A61K-0039/102	C	I		R	20060101
A61K-0039/102	C	I	F	B	20060101
A61K-0039/102	C	I	L	B	20100101
A61K-0039/102	C	I	L	R	20100101
A61K-0039/116	C	I		R	20060101
A61K-0039/116	C	I	L	B	20100101
A61K-0047/48	C	I	F	R	20060101
A61P-0031/00	C	I	L	B	20100101
A61P-0037/00	C	I	L	B	20100101
C07K-0014/195	C	I	L	B	20060101
C07K-0014/195	C	I	L	R	20060101

ECLA: A61K-039/102, A61K-039/102+M, A61K-039/116

US Classification, Current Main: 424-197110; Secondary: 424-184100, 424-193100, 424-194100, 424-203100, 424-234100, 424-250100, 424-256100, 424-831000

US Classification, Issued: 424197.11, 424203.1, 424250.1, 424256.1, 424234.1, 424184.1, 424831, 424193.1, 424194.1

JP Classification

FI Term	Facet	Rank	Type
A61K-039/095			
A61K-039/102			
A61K-039/116		A	main
A61K-047/48			
A61K-047/48	Z		
A61P-031/04			
C07K-014/195			

F-Term Theme	View Point + Figure	Additional Code
4C076		
4C085		
4C201		
4H045		
4C085	AA04	
4H045	AA30	
4C085	BA10	
4C085	BA12	
4C085	BA16	
4C085	BA17	
4C085	BA18	

4H045	BA53
4C076	BB15
4C085	BB24
4H045	CA11
4C076	CC06
4C085	CC07
4C085	CC21
4C085	CC24
4H045	DA83
4C085	DD35
4C085	DD84
4C085	DD86
4H045	EA31
4C085	EE03
4C085	EE06
4C076	EE30
4C076	EE59
4C085	FF14
4C076	FF68
4C085	GG01
4C085	GG03
4C085	GG04

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B04-C02V; B04-F10A; B14-A01A5; B14-S11B; D05-H07

Original Publication Data by Authority

Canada
Publication No. CA 2204277 C (Update 201011 E)
Publication Date: 20100202
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: CECCARINI C
  COSTANTINO P
  DASCENZI S
  GIANNOZZI A
  NORELLI F
Language: EN
Application: CA 2204277 A 19951102 (Local application)
  WO 1995IB1006 A 19951102 (PCT Application)
Priority: GB 199422096 A 19941102
Related Publication: WO 1996014086 A (Based on OPI patent)
Original IPC: A61K-39/02(I,CA,20060101,A,L) A61K-39/02(I,M,98,20060101,C)
    A61K-39/095(I,CA,20060101,A,F) A61K-39/095(I,M,98,20060101,C)
    A61K-39/102(I,CA,20060101,A,L) A61K-39/102(I,M,98,20060101,C)
Current IPC: A61K-39/02(B,I,H,CA,20060101,19970804,A,L)
    A61K-39/02(B,I,H,CA,20100101,19970804,C,L)
    A61K-39/095(B,I,H,CA,20060101,19970804,A,F)
    A61K-39/095(B,I,H,CA,20100101,19970804,C,F)
    A61K-39/102(R,I,M,EP,20060101,20051008,A,L)
    A61K-39/102(R,I,M,EP,20100101,20051008,C,L)
    A61K-39/116(R,I,M,EP,20060101,20051008,A)
    A61K-39/116(R,I,M,EP,20060101,20051008,C)
    A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
    A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
    C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
    C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116

Publication No. CA 2689871 A1 (Update 201019 E)
Publication Date: 19960517
Assignee: NOVARTIS VACCINES & DIAGNOSTICS INC (NOVS)
Inventor: CECCARINI C
  COSTANTINO P
  DASCENZI S
  GIANNOZZI A
  NORELLI F
Language: EN
Application: CA 2689871 A 19951102 (Local application)
  CA 2204277 A 19951102 (Division of application)
Priority: GB 199422096 A 19941102
Original IPC: A61K-39/095(B,I,H,CA,20060101,20100215,A,F)
    A61K-39/095(B,I,H,CA,20100101,20100215,C,F)
    A61K-39/102(R,I,M,EP,20060101,20051008,A)
    A61K-39/102(R,I,M,EP,20060101,20051008,C)
    A61K-39/116(B,I,H,CA,20060101,20100215,A,L)
    A61K-39/116(B,I,H,CA,20100101,20100215,C,L)
    A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
    A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
    A61P-31/00(B,I,H,CA,20100101,20100215,C,L)
    A61P-31/04(B,I,H,CA,20060101,20100215,A,L)
    A61P-37/00(B,I,H,CA,20100101,20100215,C,L)
    A61P-37/04(B,I,H,CA,20060101,20100215,A,L)
    C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
    C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current IPC: A61K-39/095(B,I,H,CA,20060101,20100215,A,F)
    A61K-39/095(B,I,H,CA,20100101,20100215,C,F)
    A61K-39/102(R,I,M,EP,20060101,20051008,A)
    A61K-39/102(R,I,M,EP,20060101,20051008,C)
    A61K-39/116(B,I,H,CA,20060101,20100215,A,L)
    A61K-39/116(B,I,H,CA,20100101,20100215,C,L)
    A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
    A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
    A61P-31/00(B,I,H,CA,20100101,20100215,C,L)
    A61P-31/04(B,I,H,CA,20060101,20100215,A,L)
    A61P-37/00(B,I,H,CA,20100101,20100215,C,L)
    A61P-37/04(B,I,H,CA,20060101,20100215,A,L)
    C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
    C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116

Germany
Publication No. DE 69531501 E (Update 200369 E)
Publication Date: 20030918
Assignee: CHIRON SPA; IT (CHIR)
Language: DE
Application: DE 69531501 A 19951102 (Local application)
  EP 1995935550 A 19951102 (Application)
  WO 1995IB1006 A 19951102 (PCT Application)
Priority: GB 199422096 A 19941102
Related Publication: EP 789587 A (Based on OPI patent)
  WO 1996014086 A (Based on OPI patent)
Original IPC: A61K-39/02(A) A61K-39/02(A) A61K-39/095(B) A61K-39/095(B)
    A61K-39/102(B) A61K-39/102(B)
Current IPC: A61K-39/02(A) A61K-39/02(A) A61K-39/095(B) A61K-39/095(B)
    A61K-39/102(B) A61K-39/102(B)

EPO
Publication No. EP 1312377 A2 (Update 200334 E)
Publication Date: 20030521
**Kombiniertes Meningitis Vakzin

Combined meningitis vaccine
Vaccin polyvalent anti-meningite**
Assignee: Chiron S.p.A., Via Fiorentina, 1, 53100 Siena, IT (CHIR)
Inventor: Ceccarini, Costante, Chrion SpA, Via Fiorentina 1, 53100 Siena, IT
d'Ascenzi, Sandro, Chrion SpA, Via Fiorentina 1, 53100 Siena, IT
Costantino, Paolo, Chrion SpA, Via Fiorentina 1, 53100 Siena, IT
Norelli, Francesco, Chrion SpA, Via Fiorentina 1, 53100 Siena, IT
Giannozzi, Aldo, Chrion SpA, Via Fiorentina 1, 53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 1995935550 A 19951102 (Division of application)
EP 200375069 A 19951102 (Local application)
Priority: GB 199422096 A 19941102
Related Publication: EP 789587 A (Division of patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
Original IPC: A61K-39/02(A) A61K-39/095(B) A61K-39/102(B)
Current IPC: A61K-39/095(R,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Original Abstract: A combined vaccine for bacterial meningitis comprises Hib and MenC saccharides. div
Claim:
1.A combination meningitis vaccine comprising Hib and MenC saccharides.

2.A vaccine according to claim 1 wherein the Hib and/or MenC saccharide is an oligosaccharide.

Publication No. EP 2204185 A1 (Update 201045 E)
Publication Date: 20100707
**Kombiniertes Meningitis Vakzin
Combined meningitis vaccine
Vaccin polyvalent anti-meningite**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT (NOVS)
Inventor: Ceccarini, Costante, Via Fiorentina 1, 53100 Siena, IT
Costantino, Paolo, Via Fiorentina 1, 53100 Siena, IT
DASCENZI S, IT
Gianozzi, Aldo, Via Fiorentina 1, 53100 Siena, IT
Norelli, Francesco, Via Fiorentina 1, 53100 Siena, IT
Agent: Marshall, Cameron John, Carpmaels Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 200375069 A 20030110 (Division of application)
EP 1995935550 A 19951102 (Division of application)
EP 201075114 A 19951102 (Local application)
Priority: GB 199422096 A 19941102
Related Publication: EP 1312377 A (Division of patent)
EP 789587 A (Division of patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

Original IPC: A61K-39/02(B,I,H,EP,20060101,20100520,A,F)
A61K-39/02(B,I,M,98,20060101,20100520,C)
A61K-39/095(B,I,H,EP,20060101,20100520,A,L)
A61K-39/095(B,I,M,98,20060101,20100520,C)
A61K-39/102(B,I,H,EP,20060101,20100520,A,L)
A61K-39/102(B,I,M,98,20060101,20100520,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,20100520,A,F)
A61K-39/02(B,I,H,EP,20100101,20100520,C,F)
A61K-39/095(B,I,H,EP,20060101,20100520,A,L)
A61K-39/095(B,I,H,EP,20100101,20100520,C,L) A61K-39/102(B,I,H,
EP,20060101,20100520,A,L) A61K-39/102(B,I,H,EP,20100101,20100520,C,L)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Original Abstract: A combined vaccine for bacterial meningitis comprises Hib and MenC saccharides.
Claim:
1.A combination meningitis vaccine comprising Hib saccharide conjugate and MenC saccharide conjugate, wherein the MenC and/or Hib conjugates is/are in lyophilised form.

Publication No. EP 2204185 A8 (Update 201071 E)
Publication Date: 20101027
Combined meningitis vaccine
Assignee: NOVARTIS VACCINESDIAGNOSTICS INC; IT (NOVS)
Inventor: CECCARINI C, IT
DASCENZI S, IT
COSTANTINO P, IT
NORELLI F, IT
GIANOZZI A, IT
Language: EN
Application: EP 201075114 A 19951102 (Local application)
EP 200375069 A 20030110 (Division of application)
EP 1995935550 A 19951102 (Division of application)
Priority: GB 199422096 A 19941102
Related Publication: EP 1312377 A (Division of patent)
EP 789587 A (Division of patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
Original IPC: A61K-39/02(B,I,H,EP,20060101,20100520,A,F)
A61K-39/02(B,I,M,98,20060101,20100520,C)
A61K-39/095(B,I,H,EP,20060101,20100520,A,L)
A61K-39/095(B,I,M,98,20060101,20100520,C)
A61K-39/102(B,I,H,EP,20060101,20100520,A,L) A61K-39/102(B,I,
M,98,20060101,20100520,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,20100520,A,F)
A61K-39/02(B,I,M,98,20060101,20100520,C)
A61K-39/095(B,I,H,EP,20060101,20100520,A,L)
A61K-39/095(B,I,M,98,20060101,20100520,C)
A61K-39/102(B,I,H,EP,20060101,20100520,A,L)
A61K-39/102(B,I,M,98,20060101,20100520,C)
Original Abstract: A combined vaccine for bacterial meningitis comprises Hib and MenC saccharides.

Publication No. EP 789587 A1 (Update 199738 E)
Publication Date: 19970820
**KOMBINIERTES MENNINGITIS VAKZINE

COMBINED MENINGITIS VACCINE
VACCIN POLYVALENT ANTI-MENINGITE**
Assignee: BIOCINE S.p.A., Via Fiorentina, 1, I-53100 Siena, IT (BIOC-N)
CHIRON SPA (CHIR)
Inventor: CECCARINI, Costante, Via di Catignano, 10, I-53010 Castelnuovo Berardenga, IT
COSTANTINO, Paolo, Via Toscana, 11, I-53034 Colle Val d'Elsa, IT
DASCENZI S
NORELLI, Francesco, Via Vignale, 16, I-53100 Siena, IT
GIANNOZZI, Aldo, Via Celso Cittadini, 3, I-53100 Siena, IT
D'ASCENZI, Sandro, Via Palestro, 24, I-53034 Colle Val d'Elsa, IT
D'ASCENZI, Sandro, Via Palestro, 24, I-53034 Colle Val d'Elsa, IT
D'ASCENZI, Sandro, Via Palestro, 24, I-53034 Colle Val d'Elsa, IT
D'ASCENZI, Sandro, Via Palestro, 24, I-53034 Colle Val d'Elsa, IT
D'ASCENZI, Sandro, Via Palestro, 24, I-53034 Colle Val d'Elsa, IT
Agent: Hallybone, Huw George, CARPMAELS AND RANSFORD 43 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 1995935550 A 19951102 (Local application)
WO 1995IB1006 A 19951102 (PCT Application)
Priority: GB 199422096 A 19941102
Related Publication: WO 1996014086 A (Based on OPI patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
Original IPC: A61K-39/02(A) A61K-39/095(B) A61K-39/102(B)
Current IPC: A61K-39/095(R,A,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Original Abstract: A combined vaccine for bacterial meningitis comprises Hib and MenC oligosaccharide conjugates.
Claim: Combined meningitis vaccine comprises Hib (Haemophilus influenzae type b) and MenC (Neisseria meningitidis serotype C) oligosaccharide conjugates (OC), opt. also a MenB OC. Also new are Hib. MenC and opt. MenB OC for simultaneous, separate or sequential admin..

Publication No. EP 789587 B1 (Update 200355 E)
Publication Date: 20030813
**KOMBINIERTES MENNINGITIS VAKZINE
COMBINED MENINGITIS VACCINE
VACCIN POLYVALENT ANTI-MENINGITE**
Assignee: Chiron S.p.A., Via Fiorentina, 1, 53100 Siena, IT (CHIR)
Inventor: CECCARINI, Costante, Via di Catignano, 10, I-53010 Castelnuovo Berardenga, IT
COSTANTINO, Paolo, Via Toscana, 11, I-53034 Colle Val d'Elsa, IT
D'ASCENZI, Sandro, Via Palestro, 24, I-53034 Colle Val d'Elsa, IT
NORELLI, Francesco, Via Vignale, 16, I-53100 Siena, IT
GIANNOZZI, Aldo, Via Celso Cittadini, 3, I-53100 Siena, IT
Agent: Hallybone, Huw George, Carpmaels and Ransford, 43 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 1995935550 A 19951102 (Local application)
WO 1995IB1006 A 19951102 (PCT Application)
EP 200375069 A 19951102 (Related to application)
Priority: GB 199422096 A 19941102

Related Publication: EP 1312377 A (Related to patent)
WO 1996014086 A (Based on OPI patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
Original IPC: A61K-39/02(A) A61K-39/095(B) A61K-39/102(B)
Current IPC: A61K-39/095(R,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Claim:
1.Meningitis-Kombinationsimpfstoff, umfassend Hib- und MenC-Oligosaccharid-Konjugate.

2.Impfstoff nach Anspruch 1, weiterhin umfassend ein MenB-Oligosaccharid-Konjugat.

1.A combination meningitis vaccine comprising Hib and MenC oligosaccharide conjugates.

2.A vaccine according to claim 1 further comprising a MenB oligosaccharide conjugate.

1.Vaccin polyvalent anti-meningite comprenant des conjugues d'oligosaccharide Hib et MenC.

Publication No. EP 789587 B2 (Update 200825 E)
Publication Date: 20080402
**KOMBINIERTES MENNINGITIS VAKZINE
COMBINED MENINGITIS VACCINE
VACCIN POLYVALENT ANTI-MENINGITE**
Assignee: Novartis Vaccines and Diagnostics S.r.l., Via Fiorentina 1, 53100 Siena (SI), IT (NOVS)
Inventor: CECCARINI, Costante, Via di Catignano, 10, I-53010 Castelnuovo Berardenga, IT
COSTANTINO, Paolo, Via Toscana, 11, I-53034 Colle Val d'Elsa, IT
DASCENZI S
NORELLI, Francesco, Via Vignale, 16, I-53100 Siena, IT
GIANNOZZI, Aldo, Via Celso Cittadini, 3, I-53100 Siena, IT
Agent: Hallybone, Huw George, Carpmaels and Ransford, 43-45 Bloomsbury Square, London WC1A 2RA, GB
Language: EN
Application: EP 1995935550 A 19951102 (Local application)
WO 1995IB1006 A 19951102 (PCT Application)
EP 200375069 A 20030110 (Related to application)
Priority: GB 199422096 A 19941102
Related Publication: EP 1312377 A (Related to patent)
WO 1996014086 A (Based on OPI patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
Original IPC: A61K-39/02(B,I,H,EP,20060101,19960625,A,F)
A61K-39/02(B,I,M,98,20060101,19960625,C)
A61K-39/095(B,I,H,EP,20060101,19960625,A,L)

A61K-39/095(B,I,M,98,20060101,19960625,C)
A61K-39/102(B,I,H,EP,20060101,19960625,A,L)
A61K-39/102(B,I,M,98,20060101,19960625,C)
Current IPC: A61K-39/02(B,I,H,EP,20060101,19960625,A,F)
A61K-39/02(B,I,H,EP,20060101,19960625,C,F)
A61K-39/095(B,I,H,EP,20060101,19960625,A,L)
A61K-39/095(B,I,H,EP,20060101,19960625,C,L)
A61K-39/102(B,I,H,EP,20060101,19960625,A,L)
A61K-39/102(B,I,H,EP,20060101,19960625,C,L)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Claim:
1.Meningitis-Kombinationsimpfstoff, umfassend Hib- und MenC-Oligosaccharid-Konjugate.

1.A combination meningitis vaccine comprising Hib and MenC oligosaccharide conjugates.

1.Vaccin polyvalent anti-meningite comprenant des conjugues d'oligosaccharide Hib et MenC.

Spain
Publication No. ES 2204967 T3 (Update 200431 E)
Publication Date: 20040501
Assignee: CHIRON SRL (CHIR)
Language: ES
Application: EP 1995935550 A 19951102 (Application)
Priority: GB 199422096 A 19941102
Related Publication: EP 789587 A (Based on OPI patent)
Original IPC: A61K-39/02(A) A61K-39/095(B) A61K-39/102(B)
Current IPC: A61K-39/095(R,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116

Japan
Publication No. JP 10509701 W (Update 199848 E)
Publication Date: 19980922
Assignee: BIOCINE SPA (BIOC-N)
Inventor: CECCARINI C
COSTANTINO P
DASCENZI S
NORELLI F
GIANNOZZI A
Language: JA (30 pages)
Application: WO 1995IB1006 A 19951102 (PCT Application)
JP 1996515175 A 19951102 (Local application)

Priority: GB 199422096 A 19941102
Related Publication: WO 1996014086 A (Based on OPI patent)
Original IPC: A61K-39/102(A) A61K-39/095(B) A61K-47/48(B) C07K-14/195(B)
Current IPC: A61K-39/095(R,A,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116

Publication No. JP 2007169302 A (Update 200746 E)
Publication Date: 20070705
COMBINED MENINGITIS VACCINE
Assignee: CHIRON SRL (CHIR-N)
Inventor: CECCARINI COSTANTE
COSTANTINO PAOLO
D'ASCENZI SANDRO
NORELLI FRANCESCO
GIANNOZZI ALDO
Language: JA (16 pages)
Application: JP 1996515175 A 19951102 (Division of application)
JP 200783117 A 20070327 (Local application)
Priority: GB 199422096 A 19941102
Original IPC: A61K-39/095(B,I,H,JP,20060101,20070608,A,L)
A61K-39/095(B,I,M,98,20060101,20070608,C)
A61K-39/102(B,I,H,JP,20060101,20070608,A,F)
A61K-39/102(B,I,M,98,20060101,20070608,C)
A61P-31/00(B,I,M,98,20060101,20070608,C)
A61P-31/04(B,I,H,JP,20060101,20070608,A,L)
Current IPC: A61K-39/095(B,I,H,JP,20060101,20070608,A,L)
A61K-39/095(B,I,H,JP,20060101,20070608,C,L)
A61K-39/102(B,I,H,JP,20060101,20070608,A,F)
A61K-39/102(B,I,H,JP,20060101,20070608,C,F)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
A61P-31/00(B,I,H,JP,20060101,20070608,C,L)
A61P-31/04(B,I,H,JP,20060101,20070608,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Current JP F-Terms: 4C085 4C201 4C085BA16 4C085BA18 4C085CC07 4C085EE03
4C085GG01 4C085GG03
Claim: A combination meningitis vaccine which is described in
this-application specification.

Publication No. JP 2011016850 A (Update 201108 E)
Publication Date: 20110127
Combination meningitis vaccine
Assignee: CHIRON SPA; JP (CHIR)
Language: JA (16 pages)
Application: JP 2010236921 A 20101021 (Local application)
JP 200783117 A 19951102 (Division of application)
Priority: GB 199422096 A 19941102
Original IPC: A61K-39/116(B,I,H,JP,20060101,20101224,A,F)
Current IPC: A61K-39/116(B,I,H,JP,20060101,20101224,A,F)

Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Current JP FI-Terms: A61K-39/116 (main, A)
Current JP F-Terms: 4C085 4C085AA04 4C085BA16 4C085BA18 4C085BB24 4C085CC07 4C085EE06 4C085FF14
Original Abstract: It is providing Hib and a meningococcus combination vaccine.This is used in prevention of bacterial meningitis and should make an economical, safe, and convenient vaccination possible with respect to the leading cause of a meningitis.In the combination vaccine for treatment of bacterial meningitis, especially one embodiment,The combination vaccine etc. which are effectively protected from the infection by the Haemophilus influenzae B type|mold (Hib), the Neisseria meningitidis (meningococcus) B serotype, and C serotype (MenB, MenC).AbsenceThis invention relates to the combination vaccine for treatment of bacterial meningitis.Especially a combination vaccine is effectively protected from the infection by the Haemophilus influenzae B type|mold (Hib), the Neisseria meningitidis (meningococcus) B serotype, and C serotype (MenB, MenC).
Claim: Invention as described in a specification.

Publication No. JP 3989951 B2 (Update 200768 E)
Publication Date: 20071010
Combination meningitis vaccine
Assignee: CHIRON SPA; JP (CHIR-N)
Language: JA (15 pages)
Application: WO 1995IB1006 A 19951102 (PCT Application)
JP 1996515175 A 19951102 (Local application)
Priority: GB 199422096 A 19941102
Related Publication: JP 10509701 A (Previously issued patent)
WO 1996014086 A (Based on OPI patent)
Original IPC: A61K-39/095(B,I,H,JP,20060101,20070920,A,L)
A61K-39/095(B,I,M,98,20060101,20070920,C)
A61K-39/102(B,I,H,JP,20060101,20070920,A,F)
A61K-39/102(B,I,M,98,20060101,20070920,C)
A61K-47/48(B,I,H,JP,20060101,20070920,A,L)
A61K-47/48(B,I,M,98,20060101,20070920,C)
C07K-14/195(B,I,H,JP,20060101,20070920,A,L)
C07K-14/195(B,I,M,98,20060101,20070920,C)
Current IPC: A61K-39/095(B,I,H,JP,20060101,20070920,A,L)
A61K-39/095(B,I,H,JP,20060101,20070920,C,L)
A61K-39/102(B,I,H,JP,20060101,20070920,A,F)
A61K-39/102(B,I,H,JP,20060101,20070920,C,F)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(B,I,H,JP,20060101,20070920,A,L)
C07K-14/195(B,I,H,JP,20060101,20070920,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Current JP F-Terms: 4C076 4C085 4H045 4C085AA04 4H045AA30 4C085BA10 4C085BA12 4C085BA16 4C085BA17 4C085BA18 4H045BA53 4C076BB15 4C085BB24 4H045CA11 4C076CC06 4C085CC21 4C085CC24 4H045DA83 4C085DD35 4C085DD84 4C085DD86 4H045EA31 4C085EE03 4C076EE30 4C076EE59 4C076FF68 4C085GG03 4C085GG04
Claim: The combination meningitis vaccine containing a Hib oligosaccharide bonded material and a MenC oligosaccharide bonded material.

United States
Publication No. US 6251401 B1 (Update 200138 E)
Publication Date: 20010626
Combined meningitis vaccine.
Assignee: Chiron S.p.A., Siena, IT (CHIR)
Inventor: Ceccarini, Costante, Castelnuovo Berardenga, IT

Costantino, Paolo, Colle Val DprimeElsa, IT
DprimeAscenzi, Sandro, Colle Val DprimeElsa, IT
Norelli, Francesco, Siena, IT
Giannozzi, Aldo, Siena, IT
Agent: Trujillo; Doreen Y.
Harbin; Alisa A.
Blackburn; Robert P.
Language: EN
Application: WO 1995IB1006 A 19951102 (PCT Application)
US 1997836080 A 19970501 (Local application)
Priority: GB 199422096 A 19941102
Related Publication: WO 1996014086 A (Based on OPI patent)
Original IPC: A61K-39/385(A) A61K-39/095(B) A61K-39/102(B) A61K-39/116(B)
Current IPC: A61K-39/095(R,A,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M A61K-39/116
Current US Class (main): 424-197110
Current US Class (secondary): 424-184100 424-193100 424-194100 424-203100 424-234100 424-250100 424-256100 424-831000
Original US Class (main): 424197.11
Original US Class (secondary): 424203.1 424250.1 424256.1 424234.1 424184.1 424831 424193.1 424194.1
Original Abstract: A combined vaccine for bacterial meningitis comprises Hib and MenC oligosaccharide conjugates.
Claim:
1.A combination bacterial meningitis vaccine comprising ~Haemophilus influenzae~type B and ~Neisseria meningitidis ~serotype C capsular oligosaccharide conjugates, wherein capsular oligosaccharides of ~Haemophilus influenzae~type B and ~Neisseria meningitidis ~serotype C are size-selected in order to exclude short-chain oligomers having a degree of polymerisation of less than 4.

WIPO
Publication No. WO 1996014086 A1 (Update 199625 B)
Publication Date: 19960517
COMBINED MENINGITIS VACCINE
Assignee: BIOCINE S.P.A., IT (BIOC-N)
Inventor: CECCARINI, COSTANTE, IT
COSTANTINO, PAOLO, IT
DASCENZI S
NORELLI, FRANCESCO, IT
GIANNOZZI, ALDO, IT
D'ASCENZI, SANDRO, IT
D'ASCENZI, SANDRO, IT
D'ASCENZI, SANDRO, IT
D'ASCENZI, SANDRO, IT
D'ASCENZI, SANDRO, IT
D'ASCENZI, SANDRO, IT
Language: EN (32 pages, 6 drawings)
Application: WO 1995IB1006 A 19951102 (Local application)
Priority: GB 199422096 A 19941102
Designated States: (National Original) CA JP US
(Regional Original) AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

Original IPC: A61K-39/02(A) A61K-39/095(B) A61K-39/102(B)
Current IPC: A61K-39/095(R,A,I,M,JP,20060101,20051220,A,L)
A61K-39/095(R,I,M,JP,20060101,20051220,C,L)
A61K-39/102(R,I,M,EP,20060101,20051008,A)
A61K-39/102(R,I,M,EP,20060101,20051008,C)
A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
A61K-47/48(R,I,M,JP,20060101,20051220,A,F)
A61K-47/48(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/102 A61K-39/102+M
Original Abstract: A combined vaccine for bacterial meningitis comprises Hib and MenC oligosaccharide conjugates.

10/7/16 (Item 16 from file: 351)
DIALOG(R)File 351:Derwent WPI

0006496336
WPI ACC NO: 1993-303147/199338
XRAM Acc No: C1993-134992
New conjugates of heat shock protein and oligo- or ****polysaccharide**** - used in vaccines or to prevent or treat bacterial infection
Patent Assignee: BIOCINE SCLAVO SPA (ISTS); BIOCINE SPA (ISTS); CHIRON SPA (CHIR); IST RICERCHE IMMUNOBIOLOGICHE SIENA SRL (RICE-N)
Inventor: CONSTANTINO P; COSTANTINO P; NORELLI F; RAPPUOLI R; VITI S
Patent Family (15 patents, 41 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 1993017712	A2	19930916	WO 1993EP516	A	19930308	199338	B
AU 199337462	A	19931005	AU 199337462	A	19930308	199405	E
EP 632727	A1	19950111	EP 1993906489	A	19930308	199507	E
			WO 1993EP516	A	19930308		
WO 1993017712	A3	19931111	WO 1993EP516	A	19930308	199514	E
JP 7504423	W	19950518	JP 1993515333	A	19930308	199528	E
			WO 1993EP516	A	19930308		
IT 1262896	B	19960722	IT 1992FI58	A	19920306	199709	E
EP 632727	B1	19971229	EP 1993906489	A	19930308	199805	E
			WO 1993EP516	A	19930308		
DE 69315993	E	19980205	DE 69315993	A	19930308	199811	E
			EP 1993906489	A	19930308		
			WO 1993EP516	A	19930308		
US 6403099	B1	20020611	WO 1993EP516	A	19930308	200244	E
			US 1994256847	A	19941101		
CA 2131551	C	20030520	CA 2131551	A	19930308	200335	E
			WO 1993EP516	A	19930308		
JP 2004346083	A	20041209	JP 1993515333	A	19930308	200481	E
			JP 2004216652	A	20040723		
JP 2005068131	A	20050317	JP 1993515333	A	19930308	200520	E
			JP 2004137928	A	20040506		
JP 3641483	B2	20050420	JP 1993515333	A	19930308	200527	E
			WO 1993EP516	A	19930308		
JP 2009102344	A	20090514	JP 2004137928	A	19930308	200933	E
			JP 2008312770	A	20081208		
JP 2011052000	A	20110317	JP 2008312770	A	19930308	201121	E
			JP 2010239145	A	20101025		

Priority Applications (number, kind, date): IT 1992FI58 A 19920306

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 1993017712	A2	EN	69	0	
National Designated States,Original: AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA US					
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE					
AU 199337462	A	EN			Based on OPI patent WO 1993017712
EP 632727	A1	EN			PCT Application WO 1993EP516
					Based on OPI patent WO 1993017712
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
WO 1993017712	A3	EN			
JP 7504423	W	JA			PCT Application WO 1993EP516
					Based on OPI patent WO 1993017712
EP 632727	B1	EN	27		PCT Application WO 1993EP516
					Based on OPI patent WO 1993017712
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
DE 69315993	E	DE			Application EP 1993906489
					PCT Application WO 1993EP516
					Based on OPI patent EP 632727
					Based on OPI patent WO 1993017712
US 6403099	B1	EN			PCT Application WO 1993EP516
					Based on OPI patent WO 1993017712
CA 2131551	C	EN			PCT Application WO 1993EP516
					Based on OPI patent WO 1993017712
JP 2004346083	A	JA	36		Division of application JP 1993515333
JP 2005068131	A	JA	35		Division of application JP 1993515333
JP 3641483	B2	JA	27		PCT Application WO 1993EP516
					Previously issued patent JP 07504423
					Based on OPI patent WO 1993017712
JP 2009102344	A	JA	35		Division of application JP 2004137928
JP 2011052000	A	JA	35		Division of application JP 2008312770

Alerting Abstract WO A2

A conjugate cpd. comprises at least one heat shock protein (hsp) or portion including at least one immunostimulatory domain; and at least one oligosaccharide or ****polysaccharide****. The shp may be e.g. M. bovis BCG GroEl-type 65 kD hsp (hsp R65), recombinant M. tuberculosis Dnak-type 60 kD hsp (hsp R70) or a hsp from H. pylori.

USE/ADVANTAGE - The hsps are highly conserved across bacteria and they stimulate the cellular immune system. When they are conjugated to a ****polysaccharide**** they provide an immunostimulatory effect and produce anti-****polysaccharide**** antibodies in the absence of adjuvants and of pre-sensitisation. The conjugates can be used as vaccines for prophylactic or therapuetic use. In partic. they can be used for vaccination against bacteia such as H. influenzae, Streptococcus, Salmonella and Meningococci

Title Terms/Index Terms/Additional Words: NEW; CONJUGATE; HEAT; SHOCK; PROTEIN; OLIGO; POLY; SACCHARIDE; VACCINE; PREVENT; TREAT; BACTERIA; INFECT

Class Codes
International Classification (Main): A61K-047/48
(Additional/Secondary): A61K-039/385, C07K-014/195, C07K-002/00
International Classification (+ Attributes)
IPC + Level Value Position Status Version

A61K-0038/00 A N R 20060101
A61K-0039/00 A I F B 20060101
A61K-0039/00 A I L R 20060101
A61K-0039/095 A I R 20060101
A61K-0039/385 A I L R 20060101
A61K-0047/48 A I R 20060101
A61P-0031/04 A I L B 20060101
A61P-0031/04 A I L R 20060101
A61P-0037/04 A I L R 20060101
C07K-0014/195 A I L R 20060101
C07K-0014/205 A I R 20060101
C07K-0014/35 A I R 20060101
C07K-0014/41 A I L R 20060101
C07K-0019/00 A I L R 20060101
C08B-0037/00 A I L R 20060101
C12N-0015/09 A I F R 20060101
C12P-0021/02 A I L R 20060101
A61K-0031/715 A I L B 20060101
A61K-0039/02 A I L B 20060101
A61K-0047/48 A I L B 20060101
C07K-0014/195 A I F B 20060101
C12N-0015/09 A I L B 20060101
C12P-0019/04 A N L B 20060101
C12P-0021/02 A N L B 20060101
A61K-0038/00 C N R 20060101
A61K-0039/00 C I F B 20090101
A61K-0039/00 C I L R 20060101
A61K-0039/095 C I R 20060101
A61K-0039/385 C I L R 20060101
A61K-0047/48 C I R 20060101
A61P-0031/00 C I L B 20090101
A61P-0031/00 C I L R 20060101
A61P-0037/00 C I L R 20060101
C07K-0014/195 C I R 20060101
C07K-0014/41 C I L R 20060101
C07K-0019/00 C I L R 20060101
C08B-0037/00 C I L R 20060101
C12N-0015/09 C I F R 20060101
C12P-0021/02 C I L R 20060101

ECLA: A61K-039/095, A61K-047/48R2V, C07K-014/205, C07K-014/35
ICO: K61K-038:00, K61K-039:00, M07K-207:00, M07K-319:35, M07K-319:40
US Classification, Issued: 424192.1, 530395, 514569, 4357.32, 43512, 424248.1

JP Classification

FI	Term	Facet	Rank	Type
A61K-031/715			B	secondary
A61K-039/00		H	A	main
A61K-039/00		H	ZNA	
A61K-039/00		H		
A61K-039/00		Z		
A61K-039/02			B	secondary
A61K-039/385				
A61K-047/48			ZNA	
A61K-047/48				
A61K-047/48			B	secondary
A61K-047/48		Z		
A61P-031/04			B	secondary
A61P-031/04				
A61P-037/04				
C07K-014/195			ZNA	
C07K-014/195				

C07K-014/195		ZNA	A	main
C07K-014/35			-	additional
C07K-014/35				
C07K-014/41				
C07K-019/00				
C08B-037/00		Z		
C12N-015/00		A		
C12N-015/00		A	B	secondary
C12P-019/04			-	additional
C12P-021/02		C		
C12P-021/02		C	-	additional

F-Term Theme	View Point + Figure	Additional Code
4B024		
4B064		
4C076		
4C085		
4C090		
4C201		
4H045		
4C086		
4B024	AA01	
4C086	AA01	
4C086	AA02	
4C090	AA02	
4C085	AA03	
4C086	AA03	
4C085	AA04	
4C090	AA05	
4C090	AA09	
4H045	AA10	
4H045	AA11	
4C076	AA12	
4H045	AA20	
4H045	AA30	
4B064	AF11	
4B064	AG31	
4C090	BA01	
4C085	BA07	
4C085	BA09	
4H045	BA10	
4C085	BA20	
4B024	BA31	
4C085	BA38	
4H045	BA41	
4C090	BA51	
4H045	BA53	
4C076	BB11	
4C085	BB11	
4C085	BB12	
4C085	BB24	
4C090	BB62	
4C090	BB65	
4C090	BB69	
4C090	BC19	
4C090	BC20	
4B024	CA02	
4B064	CA02	
4B024	CA04	
4B024	CA05	
4B064	CA05	

4B024	CA06	
4B024	CA11	
4H045	CA11	
4B064	CA19	
4C090	CA35	
4C085	CC05	
4C076	CC06	
4C076	CC07	
4C085	CC07	
4C085	CC08	
4C085	CC21	
4B064	CC24	
4C076	CC31	
4C085	CC32	
4C085	CC33	
4B064	DA01	
4B024	DA06	
4C090	DA23	
4H045	DA86	
4C085	DD51	
4C085	DD52	
4C085	DD59	
4C085	DD62	
4C085	DD86	
4B024	EA04	
4C086	EA28	
4H045	EA29	
4H045	EA31	
4C085	EE01	
4C085	EE03	
4C076	EE41	
4C076	EE41	A
4C076	EE59	
4C076	EE59	A
4B024	FA02	
4B024	FA10	
4H045	FA10	
4H045	FA72	
4H045	FA74	
4C085	FF01	
4C085	FF02	
4C085	FF03	
4C085	FF12	
4C085	FF13	
4C085	FF14	
4C085	FF19	
4C085	FF20	
4C076	FF70	
4B024	GA11	
4B024	GA13	
4B024	GA19	
4H045	GA21	
4C085	GG01	
4C085	GG03	
4C085	GG04	
4C085	GG08	
4C085	GG10	
4C076	GG41	
4H045	HA01	
4B024	HA03	
4B024	HA08	
4B024	HA09	

4B024 HA14
4C086 MA02
4C086 MA05
4C086 NA14
4C086 ZB35

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B02-V02; B04-B02B1; B04-B04A5; B04-C02; B04-D01; B12-A01; B12-A06; D05-C11; D05-H07

Original Publication Data by Authority

Australia
Publication No. AU 199337462 A (Update 199405 E)
Publication Date: 19931005
Assignee: BIOCINE SCLAVO SPA (ISTS)
Inventor: RAPPUOLI R
COSTANTINO P
VITI S
NORELLI F
Language: EN
Application: AU 199337462 A 19930308 (Local application)
Priority: IT 1992FI58 A 19920306
Related Publication: WO 1993017712 A (Based on OPI patent)
Original IPC: A61K-47/48(A) C07K-15/00(B)
Current IPC: A61K-47/48(R,A,I,M,EP,20060101,20051206,A)
A61K-47/48(R,I,M,EP,20060101,20051206,C)

Canada
Publication No. CA 2131551 C (Update 200335 E)
Publication Date: 20030520
Assignee: CHIRON SPA (CHIR-N)
Inventor: VITI S
NORELLI F
RAPPUOLI R
COSTANTINO P
Language: EN
Application: CA 2131551 A 19930308 (Local application)
WO 1993EP516 A 19930308 (PCT Application)
Priority: IT 1992FI58 A 19920306
Related Publication: WO 1993017712 A (Based on OPI patent)
Original IPC: A61K-39/39(A) A61K-39/02(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)

C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40

Germany
Publication No. DE 69315993 E (Update 199811 E)
Publication Date: 19980205
Assignee: BIOCINE SPA; IT (BIOC-N)
Language: DE
Application: DE 69315993 A 19930308 (Local application)
EP 1993906489 A 19930308 (Application)
WO 1993EP516 A 19930308 (PCT Application)
Priority: IT 1992FI58 A 19920306
Related Publication: EP 632727 A (Based on OPI patent)
WO 1993017712 A (Based on OPI patent)
Original IPC: A61K-47/48(A) C07K-2/00(B)
Current IPC: A61K-47/48(A) C07K-2/00(B)

EPO
Publication No. EP 632727 A1 (Update 199507 E)
Publication Date: 19950111
**KONJUGATE AUS HITZESCHOCKPROTEINEN UND OLIGO- ODER POLYSACCHARIDEN
CONJUGATES FORMED FROM HEAT SHOCK PROTEINS AND OLIGO- OR POLYSACCHARIDES
COMPOSES CONJUGUES OBTENUS A PARTIR DE PROTEINES DU CHOC THERMIQUE ET
D'OLIGOSACCHARIDES OU DE POLYSACCHARIDES**
Assignee: BIOCINE SpA, Via Fiorentina, 1, I-53100 Siena, IT (ISTS)
Inventor: RAPPUOLI, Rino, Via Calamadrei, 39, Quercegrossa, I-53010
Monteriggioni, IT
COSTANTINO, Paolo, Via Toscano, 11, I-53034 Colle Val d'Elsa, IT
VITI, Stefano, Via Dante Alighieri, I-53018 Sovicille, IT
NORELLI, Francesco, Via Vignali, 16, I-53100 Siena, IT
Agent: Hallybone, Huw George, CARPMAELS AND RANSFORD 43 Bloomsbury Square,
London WC1A 2RA, GB
Language: EN
Application: EP 1993906489 A 19930308 (Local application)
WO 1993EP516 A 19930308 (PCT Application)
Priority: IT 1992FI58 A 19920306
Related Publication: WO 1993017712 A (Based on OPI patent)
Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI
LU MC NL PT SE
Original IPC: A61K-47/48(A) C07K-15/00(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)

A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L) C07K-19/00(R,I,M,JP,20060101,20051220,C,L) C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)

Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35

Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35 M07K-319:40

Original Abstract: A conjugate compound comprises at least one heat shock protein or portion thereof including at least one immunostimulatory domain and at least one capsular oligosaccharide or polysaccharide of a pathogenic bacteria. The compound comprises oligosaccharides of the Meningococci C (MenC) group and a heat shock protein selected from (M. bovis) BCG GroEl-type 65kDa hsp (hspR65), recombinant (M. tuberculosis) DnaK-type 70kDa hsp (hspR70) and a heat shock protein from (H. pylori). The conjugate compounds are useful in the preparation of vaccines to prevent bacterial infection.

Claim: A conjugate cpd. comprises at least one heat shock protein (hsp) or portion including at least one immunostimulatory domain; and at least one oligosaccharide or polysaccharide. The shp may be e.g. M. bovis BCG GroEl-type 65 kD hsp (hsp R65), recombinant M. tuberculosis Dnak-type 60 kD hsp (hsp R70) or a hsp from H. pylori.

Publication No. EP 632727 B1 (Update 199805 E)

Publication Date: 19971229

**KONJUGATE AUS HITZESHOCKPROTEINEN UND OLIGO- ODER POLYSACCHARIDEN
CONJUGATES FORMED FROM HEAT SHOCK PROTEINS AND OLIGO- OR POLYSACCHARIDES
COMPOSES CONJUGUES OBTENUS A PARTIR DE PROTEINES DU CHOC THERMIQUE ET D'OLIGOSACCHARIDES OU DE POLYSACCHARIDES**

Assignee: BIOCINE S.p.A., Via Fiorentina, 1, I-53100 Siena, IT (BIOC-N)

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Agent: Hallybone, Huw George, CARPMAELS AND RANSFORD 43 Bloomsbury Square, London WC1A 2RA, GB

Language: EN (27 pages)

Application: EP 1993906489 A 19930308 (Local application)
WO 1993EP516 A 19930308 (PCT Application)

Priority: IT 1992FI58 A 19920306

Related Publication: WO 1993017712 A (Based on OPI patent)

Designated States: (Regional Original) AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

Original IPC: A61K-47/48(A) C07K-2/00(B)

Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)

A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40
Claim:

* 1. Konjugatverbindung, die mindestens ein Hitzeschockprotein oder einen Teil davon umfasst, enthaltend mindestens eine immunstimulierende Domaene und mindestens ein Oligosaccharid oder Polysaccharid.

* 1. A conjugate compound comprising at least one heat shock protein or portion thereof including at least one immunostimulatory domain and at least one oligosaccharide or polysaccharide.

Italy
Publication No. IT 1262896 B (Update 199709 E)
Publication Date: 19960722
Assignee: IST RICERCHE IMMUNOBIOLOGICHE SIENA SRL (RICE-N)
Language: IT
Application: IT 1992FI58 A 19920306 (Local application)
Original IPC: C08G(A)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)

C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40

Japan
Publication No. JP 7504423 W (Update 199528 E)
Publication Date: 19950518
Assignee: BIOCINE SCLAVO SPA (ISTS)
Inventor: RAPPUOLI R
COSTANTINO P
NORELLI F
Language: JA
Application: JP 1993515333 A 19930308 (Local application)
WO 1993EP516 A 19930308 (PCT Application)
Priority: IT 1992FI58 A 19920306
Related Publication: WO 1993017712 A (Based on OPI patent)
Original IPC: A61K-47/48(A) A61K-39/385(B) C07K-14/195(B)
Current IPC: A61K-47/48(A) A61K-39/385(B) C07K-14/195(B)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40

Publication No. JP 2004346083 A (Update 200481 E)
Publication Date: 20041209
CONJUGATE FORMED FROM HEAT SHOCK PROTEIN AND OLIGO- OR POLYSACCHARIDE
Assignee: CHIRON SRL (CHIR-N)
Inventor: RAPPUOLI RINO
CONSTANTINO PAOLO
VITI STEFANO
NORELLI FRANCESCO
Language: JA (36 pages)
Application: JP 1993515333 A 19930308 (Division of application)
JP 2004216652 A 20040723 (Local application)
Priority: IT 1992FI58 A 19920306
Original IPC: C07K-14/195(A) A61K-39/00(B) C07K-14/35(B) C08B-37/00(B)
C12P-21/02(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)

C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
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C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
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Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40
Current JP F-Terms: 4B024 4B064 4C085 4C090 4H045 4B024AA01 4C090AA02
4C085AA03 4C090AA05 4C090AA09 4H045AA10 4H045AA11 4H045AA20 4H045AA30
4B064AG31 4C090BA01 4H045BA10 4B024BA31 4C090BA51 4C085BB11 4C085BB12
4B064CA02 4B024CA04 4B024CA05 4B024CA06 4B024CA11 4H045CA11 4B064CA19
4C090CA35 4B064CC24 4B064DA01 4B024DA06 4C090DA23 4H045DA86 4C085DD51
4B024EA04 4H045EA31 4C085EE03 4B024FA02 4B024FA10 4H045FA72 4H045FA74
4B024GA11 4B024GA19 4B024HA03 4B024HA08 4B024HA09 4B024HA14

Publication No. JP 2005068131 A (Update 200520 E)
Publication Date: 20050317
**CONJUGATE FORMED FROM HEAT SHOCK PROTEIN AND OLIGOSACCHARIDE OR
POLYSACCHARIDE**
Assignee: CHIRON SRL (CHIR-N)
Inventor: RAPPUOLI RINO
CONSTANTINO PAOLO
VITI STEFANO
NORELLI FRANCESCO
Language: JA (35 pages)
Application: JP 1993515333 A 19930308 (Division of application)
JP 2004137928 A 20040506 (Local application)
Priority: IT 1992FI58 A 19920306
Original IPC: A61K-39/00(A) A61K-47/48(B) A61P-31/04(B) A61P-37/04(B)
C07K-14/195(B) C07K-14/35(B) C07K-19/00(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)

C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40
Current JP F-Terms: 4C076 4C085 4C201 4H045 4C085AA03 4H045AA10 4H045AA11
4C085BA07 4H045BA10 4H045BA41 4C076BB11 4C085BB24 4H045CA11 4C076CC07
4C085CC21 4C076CC31 4H045DA86 4C085DD51 4H045EA31 4C076EE41 4C076EE59
4H045FA74 4C076FF70 4C085GG01

Publication No. JP 2009102344 A (Update 200933 E)
Publication Date: 20090514
b CONJUGATE FORMED FROM HEAT SHOCK PROTEIN AND OLIGOSACCHARIDE OR
POLYSACCHARIDE**
Assignee: CHIRON SRL (CHIR-N)
Inventor: RAPPUOLI RINO
CONSTANTINO PAOLO
VITI STEFANO
NORELLI FRANCESCO
Language: JA (35 pages)
Application: JP 2008312770 A 20081208 (Local application)
JP 2004137928 A 19930308 (Division of application)
Priority: IT 1992FI58 A 19920306
Original IPC: A61K-39/00(B,I,H,JP,20060101,20090417,A,F)
A61K-39/00(B,I,M,98,20060101,20090417,C)
A61P-31/00(B,I,M,98,20060101,20090417,C)
A61P-31/04(B,I,H,JP,20060101,20090417,A,L)
C07K-14/195(B,N,M,98,20060101,20090417,C)
C07K-14/35(B,N,H,JP,20060101,20090417,A,L)
Current IPC: A61K-38/00(R,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(B,I,H,JP,20060101,20090417,A,F)
A61K-39/00(B,I,H,JP,20090101,20090417,C,F)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(B,I,H,JP,20090101,20090417,C,L)
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A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40

Current JP FI-Terms: A61K-39/00 H (main, A, ZNA) A61P-31/04 (secondary, B) C07K-14/35 (additional, -)
Current JP F-Terms: 4C085 4C201 4H045 4C085AA03 4C085AA04 4H045AA30 4H045BA10 4C085BB11 4C085BB24 4H045CA11 4H045EA31 4C085EE03 4H045FA74
Original Abstract: It is achieved by the career|carrier used conventionally and reliance also identifies the novel protein career|carrier which gives a favorable immunogen characteristic conjugate,Make possible the reliably highly potent vaccination which raises the immunogenic response with respect to an oligosaccharide and polysaccharide.The conjugate compound containing some heat-shock proteins which contain at least one heat-shock protein or at least one immunostimulation domain, and the oligosaccharide or polysaccharide of at least one capsule of a pathogenic microbe.Absence(Field|area of invention)This invention relates to the conjugate compound which consists of a heat-shock protein, and polysaccharide or an oligosaccharide (In particular, it is polysaccharide or the oligosaccharide derived from a capsule of a pathogenic microorganism.).this compound can induce|guide|derive formation of an anti- polysaccharide antibody.Therefore, this compound is useful as a vaccine used for a human and an animal.
Claim: Invention as described in specification.

Publication No. JP 2011052000 A (Update 201121 E)
Publication Date: 20110317
Conjugate formed from a heat-shock protein, an oligosaccharide, or polysaccharide
Assignee: CHIRON SPA; JP (CHIR)
Language: JA (35 pages)
Application: JP 2010239145 A 20101025 (Local application)
JP 2008312770 A 19930308 (Division of application)
Priority: IT 1992FI58 A 19920306
Original IPC: A61K-31/715(B,I,H,JP,20060101,20110218,A,L)
A61K-39/02(B,I,H,JP,20060101,20110218,A,L)
A61K-47/48(B,I,H,JP,20060101,20110218,A,L)
A61P-31/04(B,I,H,JP,20060101,20110218,A,L)
C07K-14/195(B,I,H,JP,20060101,20110218,A,F)
C12N-15/09(B,I,H,JP,20060101,20110218,A,L)
C12P-19/04(B,N,H,JP,20060101,20110218,A,L)
C12P-21/02(B,N,H,JP,20060101,20110218,A,L)
Current IPC: A61K-31/715(B,I,H,JP,20060101,20110218,A,L)
A61K-39/02(B,I,H,JP,20060101,20110218,A,L)
A61K-47/48(B,I,H,JP,20060101,20110218,A,L)
A61P-31/04(B,I,H,JP,20060101,20110218,A,L)
C07K-14/195(B,I,H,JP,20060101,20110218,A,F)
C12N-15/09(B,I,H,JP,20060101,20110218,A,L)
C12P-19/04(B,N,H,JP,20060101,20110218,A,L)
C12P-21/02(B,N,H,JP,20060101,20110218,A,L)
Current JP FI-Terms: C07K-14/195 (main, A, ZNA) A61K-31/715 (secondary, B) A61K-39/02 (secondary, B) A61K-47/48 (secondary, B) A61P-31/04 (secondary, B) C12N-15/00 A (secondary, B) C12P-19/04 (additional, -) C12P-21/02 C (additional, -)
Current JP F-Terms: 4B024 4B064 4C076 4C085 4C086 4H045 4B024AA01 4C086AA01 4C086AA02 4C085AA03 4C086AA03 4H045AA11 4H045AA20 4H045AA30 4B064AF11 4B064AG31 4C085BA07 4H045BA10 4B024BA31 4H045BA53 4B024CA02 4B064CA05 4H045CA11 4B064CA19 4B064CC24 4C076CC31 4B064DA01 4B024DA06 4H045DA86 4C085DD51 4C085DD62 4C086EA28 4H045EA29 4C085EE01 4C076EE41A 4C076EE59A 4H045FA10 4H045FA74 4B024GA13 4C085GG03 4C085GG08 4C085GG10 4C086MA02 4C086MA05 4C086NA14 4C086ZB35
Original Abstract: It is achieved by the carrier used conventionally and reliance also identifies the novel protein carrier which gives a favorable immunogen characteristic conjugate,Make possible the reliably highly potent vaccination which raises the immunogenic response with

respect to an oligosaccharide and polysaccharide.The conjugate compound containing some heat-shock proteins which contain at least one heat-shock protein or at least one immunostimulation domain, and the oligosaccharide or polysaccharide of at least one capsule of a pathogenic microbe.Absence(Field|area of invention)This invention relates to the conjugate compound which consists of a heat-shock protein, and polysaccharide or an oligosaccharide (In particular, it is polysaccharide or the oligosaccharide derived from a capsule of a pathogenic microorganism.).this compound can induce|guide|derive formation of an anti- polysaccharide antibody.Therefore, this compound is useful as a vaccine used for a human and an animal.
Claim: Invention as described in a specification.

Publication No. JP 3641483 B2 (Update 200527 E)
Publication Date: 20050420
Assignee: CHIRON SPA (CHIR-N)
Language: JA (27 pages)
Application: JP 1993515333 A 19930308 (Local application)
WO 1993EP516 A 19930308 (PCT Application)
Priority: IT 1992FI58 A 19920306
Related Publication: JP 07504423 A (Previously issued patent)
WO 1993017712 A (Based on OPI patent)
Original IPC: C08B-37/00(A) A61K-39/385(B) A61K-47/48(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40
Current JP F-Terms: 4C076 4C085 4C090 4H045 4C090AA02 4C085AA03 4C085AA04
4C090AA05 4C090AA09 4H045AA10 4C076AA12 4H045AA20 4H045AA30 4C085BA07
4C085BA09 4C085BA20 4C085BA38 4H045BA53 4C085BB11 4C085BB24 4C090BB62
4C090BB65 4C090BB69 4C090BC19 4C090BC20 4H045CA11 4C090CA35 4C085CC05
4C076CC06 4C085CC07 4C085CC08 4C085CC21 4C085CC32 4C085CC33 4C090DA23
4C085DD51 4C085DD52 4C085DD59 4C085DD62 4C085DD86 4H045EA29 4H045EA31
4C076EE41A 4C076EE59A 4H045FA74 4C085FF01 4C085FF02 4C085FF03 4C085FF12
4C085FF13 4C085FF14 4C085FF19 4C085FF20 4C076FF70 4H045GA21 4C085GG03

4C085GG04 4C076GG41 4H045HA01

United States
Publication No. US 6403099 B1 (Update 200244 E)
Publication Date: 20020611
Conjugates formed from heat shock proteins and oligo-or polysaccharides.
Assignee: Chiron S.p.A., Siena, IT (CHIR)
Inventor: Rappuoli, Rino, Quercegrossa, IT
Costantino, Paolo, Colle dprimeElsa, IT
Viti, Stefano, Sovicille, IT
Norelli, Francesco, Siena, IT
Agent: Attwell; Gwilym J.O.
Harbin; Alisa A.
Blackburn; Robert P.
Language: EN
Application: WO 1993EP516 A 19930308 (PCT Application)
US 1994256847 A 19941101 (Local application)
Priority: IT 1992FI58 A 19920306
Related Publication: WO 1993017712 A (Based on OPI patent)
Original IPC: C01B-3/00(A) C07K-1/00(B) G01N-33/554(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35 M07K-319:40
Original US Class (main): 424248.1
Original US Class (secondary): 424192.1 530395 514569 4357.32 43512
Original Abstract: The present invention provides conjugate compounds comprising at least one heat shock protein or portion thereof including at least one immunostimulatory domain and at least one capsular oligosaccharide or polysaccharide of a pathogenic bacteria. The compound comprises oligosaccharides of the Meningococci C (MenC) group and a heat shock protein selected from ~M. bovis ~BCG GroEl-type 65 kDa hsp (hspR65), recombinant ~M. tuberculosis ~DnaK-type 70 kDa hsp (hspR70) and a heat shock protein from ~H. pylori~. The invention also

provides processes for producing conjugate compounds, pharmaceutical compositions comprising conjugate compounds, therapeutic compositions comprising conjugate compounds, and methods of inducing an immune response.

Claim:

1.A conjugate compound comprising a portion of at least 11 to 15 amino acid residues of a heat shock protein selected from the group consisting of

~M. bovis ~BCG GroEL-type 65 kDa heat shock protein and recombinant ~M. tuberculosis ~DnaK-type 70 kDa heat shock protein, wherein said heat shock protein portion includes at least one immunostimulatory domain, said conjugate compound also comprising at least one capsular oligosaccharide or capsular polysaccharide, or immunogenic portion thereof.

WIPO
Publication No. WO 1993017712 A2 (Update 199338 B)
Publication Date: 19930916
CONJUGATES FORMED FROM HEAT SHOCK PROTEINS AND OLIGO- OR POLYSACCHARIDES
Assignee: BIOCINE SCLAVO SPA, IT (ISTS)
Inventor: RAPPUOLI, RINO, IT
COSTANTINO, PAOLO, IT
NORELLI, FRANCESCO, IT
VITI, STEFANO, IT
Language: EN (69 pages, 0 drawings)
Application: WO 1993EP516 A 19930308 (Local application)
Priority: IT 1992FI58 A 19920306
Designated States: (National Original) AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA US
(Regional Original) AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE
Original IPC: A61K-47/48(A) C07K-15/00(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35

M07K-319:40
Original Abstract: A conjugate compound comprises at least one heat shock protein or portion thereof including at least one immunostimulatory domain and at least one capsular oligosaccharide or polysaccharide of a pathogenic bacteria. The compound comprises oligosaccharides of the Meningococci C (MenC) group and a heat shock protein selected from (M. bovis) BCG GroEl-type 65kDa hsp (hspR65), recombinant (M. tuberculosis) DnaK-type 70kDa hsp (hspR70) and a heat shock protein from (H. pylori). The conjugate compounds are useful in the preparation of vaccines to prevent bacterial infection.

Publication No. WO 1993017712 A3 (Update 199514 E)
Publication Date: 19931111
Assignee: BIOCINE SCLAVO SPA (ISTS)
Inventor: RAPPUOLI R
COSTANTINO P
NORELLI F
Language: EN
Application: WO 1993EP516 A 19930308 (Local application)
Priority: IT 1992FI58 A 19920306
Original IPC: A61K-47/48(A) C07K-15/00(B)
Current IPC: A61K-38/00(R,A,N,M,EP,20060101,20051008,A)
A61K-38/00(R,N,M,EP,20060101,20051008,C)
A61K-39/00(R,I,M,JP,20060101,20051220,A,L)
A61K-39/00(R,I,M,JP,20060101,20051220,C,L)
A61K-39/095(R,I,M,EP,20060101,20051008,A)
A61K-39/095(R,I,M,EP,20060101,20051008,C)
A61K-39/385(R,I,M,JP,20060101,20051220,A,L)
A61K-39/385(R,I,M,JP,20060101,20051220,C,L)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,C)
A61P-31/00(R,I,M,JP,20060101,20051220,C,L)
A61P-31/04(R,I,M,JP,20060101,20051220,A,L)
A61P-37/00(R,I,M,JP,20060101,20051220,C,L)
A61P-37/04(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,EP,20060101,20051008,C)
C07K-14/205(R,I,M,EP,20060101,20051008,A)
C07K-14/35(R,I,M,EP,20060101,20051008,A)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
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C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
C08B-37/00(R,I,M,JP,20060101,20051220,A,L)
C08B-37/00(R,I,M,JP,20060101,20051220,C,L)
C12N-15/09(R,I,M,JP,20060101,20051220,A,F)
C12N-15/09(R,I,M,JP,20060101,20051220,C,F)
C12P-21/02(R,I,M,JP,20060101,20051220,A,L)
C12P-21/02(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/095 A61K-47/48R2V C07K-14/205 C07K-14/35
Current ECLA ICO class: K61K-38:00 K61K-39:00 M07K-207:00 M07K-319:35
M07K-319:40

10/7/17 (Item 17 from file: 351)
DIALOG(R)File 351:Derwent WPI

0003920445
WPI ACC NO: 1987-009027/198702
XRAM Acc No: C1987-003413
New glycoproteinic conjugates - prepd. from protein antigen and

oligosaccharide hapten(s), derived from ****capsular****
****polysaccharide**** of Gram-positive and Gram-negative bacteria
Patent Assignee: IST SIEROTERAPEUTICO & VACCINOGENO (ISTS)
Inventor: COSTANTINO P; PORRO M
Patent Family (8 patents, 13 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
EP 208375	A	19870114	EP 1986201160	A	19860702	198702	B
JP 62030726	A	19870209	JP 1986156342	A	19860704	198711	E
US 4711779	A	19871208	US 1986881091	A	19860702	198751	E
CA 1272952	A	19900821				199039	E
IT 1187753	B	19871223	IT 198521451	A	19850705	199044	E
EP 208375	B	19911211	EP 1986201160	A	19860702	199150	E
DE 3682838	G	19920123				199205	E
JP 1995121870	B2	19951225	JP 1986156342	A	19860704	199605	E

Priority Applications (number, kind, date): IT 198521451 A 19850705

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 208375	A	EN	12	4	
Regional Designated States,Original: AT BE CH DE FR GB LI LU NL SE					
US 4711779	A	EN	9		
CA 1272952	A	EN			
EP 208375	B	EN			
Regional Designated States,Original: AT BE CH DE FR GB LI LU NL SE					
JP 1995121870	B2	JA	9	0	Based on OPI patent JP 62030726

Alerting Abstract EP A

New glycoproteinic conjugates (I), with trivalent immunogenic activity are obtd. by covalent binding of a proteinic antigen, namely CRM 197, tetanus toxoid or pertussis toxin, with an oligosaccharidic hapten derived from the ****capsular**** ****polysaccharide**** of a Gram-positive bacterium and with one derived from the ****capsular**** ****polysaccharide**** of a Gram-negative bacterium. The haptens are first activated by introduction of terminal ester gps.

Pref. Gram-positive bacteria are Streptococcus pneumoniae and S. beta-emoliticus. Pref. Gram-negative bacteria are ****Neisseria**** ****meningitidis****, Haemophilus influenzae, Pseudomonas aeruginosa and E.coli.

USE/ADVANTAGE - (I) are useful as vaccines against capsulate Gram-positive and Gram-negative bacteria, partic. meningococcus and pneumococcus.

Equivalent Alerting Abstract US A

Glycoprotein conjugates are obtd. by linking an antigenic protein (e.g. CRM 197, tetanus toxoid or pertussis toxin) covalently with one or more oligosaccharidic haptene (obtd. from Gram positive bacterial ****capsular**** ****polysaccharide****) and at least one other oligosaccharidic haptene (from the ****capsular**** ****polysaccharide**** of a Gram negative microorganisms). Both oligosaccharide haptenes are previously activated by introdn. of terminal ester gps.

USE - The prods. are components for triple immunisation vaccines. (9pp)o

Title Terms/Index Terms/Additional Words: NEW; CONJUGATE; PREPARATION; PROTEIN; ANTIGEN; OLIGOSACCHARIDE; HAPTEN; DERIVATIVE; CAPSULE; ****POLYSACCHARIDE****; GRAM; POSITIVE; NEGATIVE; BACTERIA

Class Codes
International Classification (Main): A61K-039/116
(Additional/Secondary): A61K-039/02, A61K-039/05, A61K-039/08, A61K-039/10
International Classification (+ Attributes)

IPC + Level Value Position Status Version
A61K-0039/116 A I R 20060101
C07K-0001/08 A I L R 20060101
C07K-0001/107 A I L R 20060101
C07K-0001/113 A I L R 20060101
C07K-0014/00 A I F R 20060101
C07K-0014/195 A I L R 20060101
C07K-0014/41 A I L R 20060101
C07K-0019/00 A I L R 20060101
A61K-0039/116 C I R 20060101
C07K-0001/00 C I L R 20060101
C07K-0014/00 C I F R 20060101
C07K-0014/195 C I L R 20060101
C07K-0014/41 C I L R 20060101
C07K-0019/00 C I L R 20060101
ECLA: A61K-039/116
US Classification, Issued: 42492, 530395, 530397, 530406

JP Classification

FI Term	Facet	Rank	Type
A61K-039/02		Z	indexing
A61K-039/05		Z	indexing
A61K-039/08		Z	indexing
A61K-039/09		Z	indexing
A61K-039/095		Z	indexing
A61K-039/10		Z	indexing
A61K-039/104		Z	indexing
A61K-039/108		Z	indexing
A61K-039/116			
C07K-001/08			
C07K-001/107			
C07K-001/113			
C07K-014/00			
C07K-014/195			
C07K-014/41			
C07K-019/00			

F-Term Theme	View Point + Figure	Additional Code
4C085		
4H045		
4C085	AA04	
4H045	AA10	
4H045	AA30	
4C085	BA13	
4C085	BA14	
4C085	BA18	
4C085	BA21	
4H045	BA41	
4H045	BA53	
4H045	CA11	
4C085	CC07	
4H045	DA86	
4C085	DD03	
4C085	DD18	
4H045	EA31	
4C085	EE03	
4H045	FA20	
4H045	FA41	
4H045	FA50	
4C085	GG06	

File Segment: CPI
DWPI Class: B04; D16
Manual Codes (CPI/A-M): B02-V02; B04-B04C1; B04-C02F; B12-A01; D05-H07

Original Publication Data by Authority

Canada
Publication No. CA 1272952 A (Update 199039 E)
Publication Date: 19900821
Language: EN
Priority: IT 198521451 A 19850705
Current IPC: A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
C07K-1/00(R,I,M,JP,20060101,20051220,C,L)
C07K-1/08(R,I,M,JP,20060101,20051220,A,L)
C07K-1/107(R,I,M,JP,20060101,20051220,A,L)
C07K-1/113(R,I,M,JP,20060101,20051220,A,L)
C07K-14/00(R,I,M,JP,20060101,20051220,A,F)
C07K-14/00(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/116

Germany
Publication No. DE 3682838 G (Update 199205 E)
Publication Date: 19920123
Language: DE
Priority: IT 198521451 A 19850705

EPO
Publication No. EP 208375 A (Update 198702 B)
Publication Date: 19870114
**Glycoproteinkonjugate mit trivalenter immunogener Aktivitaet
Glycoproteinic conjugates having trivalent immunogenic activity
Conjugues glycoproteiniques ayant une activite immunogene trivalente**
Assignee: IST SIEROTERAPEUTICO VACCINOGENO (ISTS)
SCLAVO S.p.A., Via Fiorentina 1, I-53100 Siena, IT
Inventor: Porro, Massimo, Via S. Marco 43, I-56010 Localita' Collanza
Asciano Siena, IT
Costantino, Paolo, Via Toscana 11, I-53034 Colle Di Val D'Elsa'Siena, IT
Agent: Roggero, Sergio, et al, Ing. Barzano Zanardo Milano S.p.A. Via
Borgonuovo 10, I-20121 Milano, IT
Language: EN (12 pages, 4 drawings)
Application: EP 1986201160 A 19860702 (Local application)
Priority: IT 198521451 A 19850705
Designated States: (Regional Original) AT BE CH DE FR GB LI LU NL SE
Original IPC: A61K-39/11 C07K-3/08 C07K-15/14 C07K-17/10 C12P-0/00
Current IPC: A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
C07K-1/00(R,I,M,JP,20060101,20051220,C,L)
C07K-1/08(R,I,M,JP,20060101,20051220,A,L)
C07K-1/107(R,I,M,JP,20060101,20051220,A,L)
C07K-1/113(R,I,M,JP,20060101,20051220,A,L)
C07K-14/00(R,I,M,JP,20060101,20051220,A,F)
C07K-14/00(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)

C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/116
Original Abstract: Glycoproteinic conjugates having trivalent immunogenic activity obtained by binding, by a covalent bond, to a protein selected among CRM 197, tetanus toxoid, and pertussis toxin, at least an oligosaccharidic hapten derived from the capsular polysaccharide of a gram-positive bacterium and at least an oligosaccharidic hapten derived from the capsular polysaccharide of a gram-negative bacterium, and wherein said oligosaccharidic haptens are previously activated by introducing terminal esters.
Claim: New glycoproteinic conjugates (I), with trivalent immunogenic activity are obtd. by covalent binding of a proteinic antigen, namely CRM 197, tetanus toxoid or pertussis toxin, with an oligosaccharidic hapten derived from the capsular polysaccharide of a Gram-positive bacterium and with one derived from the capsular polysaccharide of a Gram-negative bacterium. The haptens are first activated by introduction of terminal ester gps.
Pref. Gram-positive bacteria are Streptococcus pneumoniae and S. beta-emoliticus. Pref. Gram-negative bacteria are Neisseria meningitidis, Haemophilus influenzae, Pseudomonas aeruginosa and E.coli.

Publication No. EP 208375 B (Update 199150 E)
Publication Date: 19911211
**Glycoproteinkonjugate mit trivalenter immunogener Aktivitaet
Glycoproteinic conjugates having trivalent immunogenic activity
Conjugues glycoproteiniques ayant une activite immunogene trivalente**
Assignee: SCLAVO S.p.A., Via Fiorentina 1, I-53100 Siena, IT
Inventor: Porro, Massimo, Via S. Marco 43, I-56010 Localita' Collanza Asciano Siena, IT
Costantino, Paolo, Via Toscana 11, I-53034 Colle Di Val D'Elsa'Siena, IT
Agent: Gervasi, Gemma, Dr. et al, Studio Brevetti e Marchi NOTARBARTOLO GERVASI 33, Viale Bianca Maria, I-20122 Milano, IT
Language: EN
Application: EP 1986201160 A 19860702 (Local application)
Priority: IT 198521451 A 19850705
Designated States: (Regional Original) AT BE CH DE FR GB LI LU NL SE
Original IPC: A61K-39/116 A61K-39/385 C07K-15/14
Current IPC: A61K-39/116(R,A,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
C07K-1/00(R,I,M,JP,20060101,20051220,C,L)
C07K-1/08(R,I,M,JP,20060101,20051220,A,L)
C07K-1/107(R,I,M,JP,20060101,20051220,A,L)
C07K-1/113(R,I,M,JP,20060101,20051220,A,L)
C07K-14/00(R,I,M,JP,20060101,20051220,A,F)
C07K-14/00(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L) C07K-14/195(R,I,M,JP,20060101,20051220,C,L) C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/116
Claim:
* 1. Glycoproteinkonjugate mit trivalenter Immunogenaktivitaet, erhalten durch Binden wenigstens eines Oligosaccharidhaptens, stammend vom kapsulaeren Polysaccharid eines gram-positiven Bakteriums, und wenigstens eines Oligosaccharidhaptens, stammend vom kapsulaeren Polysaccharid eines gram-negativen Bakteriums, durch eine kovalente

Bindung an ein Proteinantigen, ausgewaehlt aus CBM 197, Tetanustoxoid oder Pertussistoxin, nach der Voraktivierung der Oligosaccharidhaptene durch Einfuehren von endstaendigen Estergruppen.

* 1. Glycoproteinic conjugates having trivalent immunogenic activity, obtained by binding, by a covalent bond, to a proteinic antigen selected among CRM 197, tetanus toxoid, or pertussis toxin, at least one oligosaccharidic hapten derived from the capsular polysaccharide of a gram-positive bacterium, and at least one oligosaccharidic hapten derived from the capsular polysaccharide of a gram-negative bacterium, after the preliminary activation of the said oligosaccharidic haptens by the introduction of terminal ester groups.

Italy
Publication No. IT 1187753 B (Update 199044 E)
Publication Date: 19871223
Language: IT
Application: IT 198521451 A 19850705
Priority: IT 198521451 A 19850705
Current IPC: A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
C07K-1/00(R,I,M,JP,20060101,20051220,C,L)
C07K-1/08(R,I,M,JP,20060101,20051220,A,L)
C07K-1/107(R,I,M,JP,20060101,20051220,A,L)
C07K-1/113(R,I,M,JP,20060101,20051220,A,L)
C07K-14/00(R,I,M,JP,20060101,20051220,A,F)
C07K-14/00(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/116

Japan
Publication No. JP 62030726 A (Update 198711 E)
Publication Date: 19870209
Language: JA
Application: JP 1986156342 A 19860704 (Local application)
Priority: IT 198521451 A 19850705
Current IPC: A61K-39/116(R,I,M,EP,20060101,20051008,A)
A61K-39/116(R,I,M,EP,20060101,20051008,C)
C07K-1/00(R,I,M,JP,20060101,20051220,C,L)
C07K-1/08(R,I,M,JP,20060101,20051220,A,L)
C07K-1/107(R,I,M,JP,20060101,20051220,A,L)
C07K-1/113(R,I,M,JP,20060101,20051220,A,L)
C07K-14/00(R,I,M,JP,20060101,20051220,A,F)
C07K-14/00(R,I,M,JP,20060101,20051220,C,F)
C07K-14/195(R,I,M,JP,20060101,20051220,A,L)
C07K-14/195(R,I,M,JP,20060101,20051220,C,L)
C07K-14/41(R,I,M,JP,20060101,20051220,A,L)
C07K-14/41(R,I,M,JP,20060101,20051220,C,L)
C07K-19/00(R,I,M,JP,20060101,20051220,A,L)
C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/116
Current JP FI-Terms: A61K-39:02 (indexing, Z) A61K-39:05 (indexing, Z) A61K-39:08 (indexing, Z) A61K-39:09 (indexing, Z) A61K-39:095

(indexing, Z) A61K-39:10 (indexing, Z) A61K-39:104 (indexing, Z) A61K-39:108 (indexing, Z) A61K-39/116 C07K-1/08 C07K-1/107 C07K-1/113 C07K-14/00 C07K-14/195 C07K-14/41 C07K-19/00
Current JP F-Terms: 4C085 4H045 4C085AA04 4H045AA10 4H045AA30 4C085BA13 4C085BA14 4C085BA18 4C085BA21 4H045BA41 4H045BA53 4H045CA11 4C085CC07 4H045DA86 4C085DD03 4C085DD18 4H045EA31 4C085EE03 4H045FA20 4H045FA41 4H045FA50 4C085GG06

Publication No. JP 1995121870 B2 (Update 199605 E)
Publication Date: 19951225
Assignee: IST SIEROTERAPEUTICO & VACCINOGENO (ISTS)
Inventor: PORRO M
COSTANTINO P
Language: JA (9 pages, 0 drawings)
Application: JP 1986156342 A 19860704 (Local application)
Priority: IT 1985521451 A 19850705
Related Publication: JP 62030726 A (Based on OPI patent)
Original IPC: A61K-39/116(A) C07K-1/08(B) C07K-14/195(B) A61K-39/116(C) A61K-39:02(C) A61K-39:05(C) A61K-39/116(D) A61K-39:02(D) A61K-39:08(D) A61K-39/116(E) A61K-39:02(E) A61K-39:10(E)
Current IPC: A61K-39/116(A) C07K-1/08(B) C07K-14/195(B) A61K-39/116(C) A61K-39:02(C) A61K-39:05(C) A61K-39/116(D) A61K-39:02(D) A61K-39:08(D) A61K-39/116(E) A61K-39:02(E) A61K-39:10(E)

United States
Publication No. US 4711779 A (Update 198751 E)
Publication Date: 19871208
Glycoproteinic conjugates having trivalent immunogenic activity
Assignee: Sclavo S.p.A.
Inventor: Porro, Massimo, IT
Costantino, Paolo
Agent: Hedman, Gibson, Costigan Hoare
Language: EN (9 pages)
Application: US 1986881091 A 19860702 (Local application)
Priority: IT 198521451 A 19850705
Original IPC: C07K-17/10 A61K-39/385
Current IPC: A61K-39/116(R,A,I,M,EP,20060101,20051008,A) A61K-39/116(R,I,M,EP,20060101,20051008,C) C07K-1/00(R,I,M,JP,20060101,20051220,C,L) C07K-1/08(R,I,M,JP,20060101,20051220,A,L) C07K-1/107(R,I,M,JP,20060101,20051220,A,L) C07K-1/113(R,I,M,JP,20060101,20051220,A,L) C07K-14/00(R,I,M,JP,20060101,20051220,A,F) C07K-14/00(R,I,M,JP,20060101,20051220,C,F) C07K-14/195(R,I,M,JP,20060101,20051220,A,L) C07K-14/195(R,I,M,JP,20060101,20051220,C,L) C07K-14/41(R,I,M,JP,20060101,20051220,A,L) C07K-14/41(R,I,M,JP,20060101,20051220,C,L) C07K-19/00(R,I,M,JP,20060101,20051220,A,L) C07K-19/00(R,I,M,JP,20060101,20051220,C,L)
Current ECLA class: A61K-39/116
Original US Class (main): 42492
Original US Class (secondary): 530395 530397 530406
Original Abstract: Glycoproteinic conjugates having trivalent immunogenic activity obtained by binding, by a covalent bond, to a protein selected among CRM 197, tetanus toxoid, and pertussis toxin, at least an oligosaccharidic hapten derived from the capsular polysaccharide of a gram-positive bacterium and at least an oligosaccharidic hapten derived from the capsular polysaccharide of a gram-negative bacterium, and wherein said oligosaccharidic haptens are previously activated by introducing terminal esters.

10/7/18 (Item 1 from file: 24)
DIALOG(R)File 24:CSA Life Sciences Abstracts

0004004471 IP ACCESSION NO: 11359805
Toll-like receptor 2 dependent immunogenicity of glycoconjugate vaccines containing chemically derived zwitterionic polysaccharides

Gallorini, Simona; ****Berti, Francesco****; Mancuso, Giuseppe; Cozzi, Roberta; Tortoli, Marco; Volpini, Gianfranco; Telford, John L; Beninati, Concetta; Maione, Domenico; Wack, Andreas
Novartis Vaccines Research Center, Via Fiorentina 1, 53100 Siena, Italy, [mailto:awack@nimr.mrc.ac.uk]

Proceedings of the National Academy of Sciences, USA, v 106, n 41, p 17481-17486, January , 2009
PUBLICATION DATE: 2009

PUBLISHER: National Academy of Sciences, 2101 Constitution Ave. Washington DC 20418 USA

DOCUMENT TYPE: Journal Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English
ISSN: 0027-8424
DOI: 10.1073/pnas.0903313106
FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

ABSTRACT:
Group B Streptococcus (GBS) causes serious infection in neonates and is an important target of vaccine development. Zwitterionic polysaccharides(ZPS), obtained through chemical introduction of positive charges into anionic polysaccharides (PS) from GBS, have the abilityto activate human and mouse antigen presenting cells (APCs) through toll-like receptor 2 (TLR2). To generate a polysaccharidevaccine with antigen (Ag) and adjuvant properties in one molecule, we have conjugated ZPS with a carrier protein. ZPS-glycoconjugatesinduce higher T-cell and Ab responses to carrier and PS, respectively, compared to control PS-glycoconjugates made with thenative ****polysaccharide**** form. The increased immunogenicity of ZPS-conjugates correlates with their ability to activate dendriticcells (DCs). Moreover, protection of mothers or neonate offspring from lethal GBS challenge is better when mothers are immunizedwith ZPS-conjugates compared to immunization with PS-conjugates. In TLR2 knockout mice, ZPS-conjugates lose both their increasedimmunogenicity and protective effect after vaccination. When ZPS are coadministered as adjuvants with unconjugated tetanustoxoid (TT), they have the ability to increase the TT-specific antibody titer. In conclusion, glycoconjugates containing ZPSare potent vaccines. They target Ag to TLR2-expressing APCs and activate these APCs, leading to better T-cell priming andultimately to higher protective Ab titers. Thus, rational chemical design can generate potent PS-adjuvants with wide application, including glycoconjugates and coadministration with unrelated protein Ags.

10/7/19 (Item 2 from file: 24)
DIALOG(R)File 24:CSA Life Sciences Abstracts

0003895430 IP ACCESSION NO: 10980141
Chemistry of a new investigational quadrivalent meningococcal conjugate

vaccine that is immunogenic at all ages

Broeker, Michael; Dull, Peter M; Rappuoli, Rino; ****Costantino, Paolo****
Novartis Vaccines and Diagnostics GmbH & Co. KG, Marburg, Germany, [mailto:Michael.Broeker@Novartis.com]

Vaccine, v 27, n 41, p 5574-5580, September 2009
PUBLICATION DATE: 2009

PUBLISHER: Elsevier Science, The Boulevard Langford Lane Kidlington Oxford OX5 1GB UK, [mailto:usinfo-f@elsevier.com], [URL:http://www.elsevier.nl]

DOCUMENT TYPE: Journal Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English
ISSN: 0264-410X
ELECTRONIC ISSN: 1873-2518
DOI: 10.1016/j.vaccine.2009.07.036
FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

ABSTRACT:
Meningococcal disease is a serious medical condition that can prove fatal within hours in otherwise healthy individuals. Disease incidence is highest in infants, yet there is no broadly protective quadrivalent vaccine that covers this age group. A new investigational quadrivalent meningococcal glycoconjugate vaccine against meningococcal serogroups A, C, W-135, and Y (MenACWY-CRM, Novartis Vaccines, Siena, Italy), has been developed to meet this medical need. This article discusses the vaccine technology behind MenACWY-CRM, focusing on the heritage of CRM sub(197), the conjugation chemistry, the sizing of the oligosaccharides, and the advantages that these may confer on the vaccine. We highlight the differences between available vaccines and look at the clinical experience with vaccines against other diseases, demonstrating the importance of each component to the immunogenicity of conjugate vaccines. The specific technological approach, including conjugation of meningococcal oligosaccharides of defined length to the CRM sub(197) protein, has led to a vaccine that has the potential to provide broad meningococcal protection against serogroups A, C, W-135, and Y for all ages.

0003382995 IP ACCESSION NO: 8554501
Physicochemical characterisation of glycoconjugate vaccines for prevention of meningococcal diseases

Bardotti, Angela; Averani, Giovanni; ****Berti, Francesco****; Berti, Stefania; Carinci, Valeria; D'Ascenzi, Sandro; Fabbri, Barbara; Giannini, Sara; Giannozzi, Aldo; Magagnoli, Claudia; Proietti, Daniela; Norelli, Francesco; Rappuoli, Rino; Ricci, Stefano; ****Costantino, Paolo****
Novartis Vaccines and Diagnostics Srl, Via Fiorentina 1, 53100 Siena, Italy, [mailto:paolo.costantino@novartis.com]

Vaccine, v 26, n 18, p 2284-2296, April 2008
PUBLICATION DATE: 2008

PUBLISHER: Elsevier Science, The Boulevard Langford Lane Kidlington Oxford

OX5 1GB UK, [mailto:usinfo-f@elsevier.com], [URL:http://www.elsevier.nl]

DOCUMENT TYPE: Journal Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English
ISSN: 0264-410X
ELECTRONIC ISSN: 1873-2518
DOI: 10.1016/j.vaccine.2008.01.022
FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

ABSTRACT:
Bacterial ****capsular**** polysaccharides covalently linked to an appropriate carrier protein represent the best tool to induce a protective immune response against a wide range of bacterial diseases, such as meningococcal infections. We describe here the physico-chemical characterisation of glycoconjugate molecules designed to prepare a vaccine against ****Neisseria**** ****meningitidis**** serogroups A, C, W135 and Y. The use of a selective conjugation chemistry resulted in well characterised, reproducible and traceable glycoconjugate that can be consistently manufactured at large scale. A pool of physical and spectroscopic methods was used to establish glycosylation ratio, identity, molecular weight profiles, integrity of carrier protein and sites of glycosylation, assuring effective and consistent lots of vaccines.

10/7/21 (Item 4 from file: 24)
DIALOG(R)File 24:CSA Life Sciences Abstracts

0003149696 IP ACCESSION NO: 7935788
Introduction of Zwitterionic Motifs into Bacterial Polysaccharides Generates TLR2 Agonists Able to Activate APCs

Gallorini, Simona; ****Berti, Francesco****; Parente, Pierino; Baronio, Roberta; Aprea, Susanna; D'Oro, Ugo; Pizza, Mariagrazia; Telford, John L; Wack, Andreas
Novartis Vaccines Research Center, Siena, Italy

Journal of Immunology, v 179, n 12, p 8208-8215, December 2007
PUBLICATION DATE: 2007

PUBLISHER: American Association of Immunologists, 9650 Rockville Pike Bethesda MD 20814-3998 USA, [URL:http://www.jimmunol.org/]

DOCUMENT TYPE: Journal Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English
ISSN: 0022-1767
FILE SEGMENT: Bacteriology Abstracts (Microbiology B); Immunology Abstracts

ABSTRACT:
It was shown previously that bacterial polysaccharides (PS), which naturally contain both positive and negative charges, are able to activate T cells and APCs. However, the vast majority of bacterial PS are anionic and do not have these properties. In this study, we show that chemical introduction of positive charges into naturally anionic bacterial PS confers to the resulting zwitterionic PS (ZPS) the ability to activate pure human monocytes, monocyte-derived dendritic cells, and mouse bone marrow-derived dendritic cells, as do natural bacterial ZPS. Cells are induced to up-regulate MHC class II and costimulatory molecules and to

produce cytokines. In mixed monocyte-T cell cocultures, ZPS induce MHC II-dependent T cell proliferation and up-regulation of activation markers. These stimulatory qualities of ZPS disappear when the positive charge is chemically removed from the molecules and thus the zwitterionic motif is destroyed. The ability of natural and chemically derived ZPS to activate APCs can be blocked by anti-TLR2 mAbs, and TLR2 transfectants show reporter gene transcription upon incubation with ZPS. In conclusion, the generation of a zwitterionic motif in bacterial PS confers the ability to activate both APCs and T cells. This finding has important implications for the design of novel ****polysaccharide**** vaccines.

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DIALOG(R)File 399:CA SEARCH(R)
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154158714 CA: 154(8)158714u JOURNAL
First Synthesis of C. difficile PS-II Cell Wall Polysaccharide Repeating Unit
AUTHOR(S): Danieli, Elisa; Lay, Luigi; Proietti, Daniela; Berti, Francesco; Costantino, Paolo; Adamo, Roberto
LOCATION: Vaccine Chemistry Department, Novartis Vaccines & Diagnostics, 53100, Siena, Italy
JOURNAL: Organic Lett. (Organic Letters) DATE: 2011 VOLUME: 13 NUMBER: 3 PAGES: 378-381 CODEN: ORLEF7 MEDIA TYPE: online computer file ISSN: 1523-7052 LANGUAGE: English PUBLISHER: American Chemical Society
SECTION:
CA233008 Carbohydrates
IDENTIFIERS: Clostridium difficile surface polysaccharide repeating unit prepn
DESCRIPTORS:
Clostridium difficile... Glycosides... Glycosylation... Oligosaccharides... convergent synthesis of C. difficile surface polysaccharide repeating unit and its nonphosphorylated analog
Diarrhea...
nosocomial; convergent synthesis of C. difficile surface polysaccharide repeating unit and its nonphosphorylated analog
CAS REGISTRY NUMBERS:
34637-22-4 108869-64-3 121238-27-5 278784-83-1 1010440-34-2
1236190-06-9P 1256157-14-8P 1262208-34-3P 1262208-37-6P
1262208-39-8P 1262208-42-3P 1262208-43-4P 1262208-45-6P
1262208-49-0P 1262208-52-5P 1262208-53-6P 1262208-54-7P
1262208-55-8P 1262208-57-0P 1262208-58-1P 1262208-59-2P
1262208-61-6P 1262208-63-8P 1262208-65-0P 1262208-67-2P
1262208-69-4P 1262208-71-8P 1262208-73-0P 1262208-75-2P convergent synthesis of C. difficile surface polysaccharide repeating unit and its nonphosphorylated analog

10/7/23 (Item 2 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)
(c) 2011 American Chemical Society. All rts. reserv.

153478604 CA: 153(19)478604w PATENT
Combinations including pneumococcal serotype 14 saccharide
INVENTOR(AUTHOR): Costantino, Paolo
LOCATION: Switz.
ASSIGNEE: Novartis A.-G.
PATENT: PCT International ; WO 2010109325 A2 DATE: 20100930
APPLICATION: WO 2010IB735 (20100324) *US 2009PV162996 (20090324)
PAGES: 47pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:

IPCR/8 + Level Value Position Status Version Action Source Office:
A61K-0039/02 A I F B 20060101 H EP
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CL; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PE; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TH; TJ DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MK; MT; NL; NO; PL; PT; RO; SE; SI; SK; SM; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LR; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA215002 Immunochemistry
CA214XXX Mammalian Pathological Biochemistry
IDENTIFIERS: Streptococcus Neisseria combination vaccine antigen crossreactivity
DESCRIPTORS:
Polysaccharides...
capsular; combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
Development,mammalian postnatal...
child; combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
Streptococcus pneumoniae... Vaccines... Antibodies and Immunoglobulins...
Human... Mammalia...
combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
Proteins...
complement factor H-binding; of combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
Protein D...
conjugates; with capsular polysaccharides of Streptococcus pneumoniae
Toxoids...
diphtheria, conjugates; with capsular polysaccharides of Streptococcus pneumoniae
Toxins...
diphtheria, fragment; conjugates with capsular polysaccharides of Streptococcus pneumoniae
Lipid A...
for conjugation of carrier proteins to meningococcal lipooligosaccharides
Protein sequences...
for factor H-binding proteins of Neisseria meningitidis
Neisseria meningitidis...
group B; combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
Lipopolysaccharides...
lipooligosaccharides; combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
Transport proteins...
TbpA; meningococcal lipooligosaccharides derived from strains with over-expression of
Toxoids...
tetanus, conjugates; with capsular polysaccharides of Streptococcus pneumoniae
Cell membrane...
vesicles; combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
CAS REGISTRY NUMBERS:
7784-30-7 adjuvant for combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity

1246898-01-0 1246898-02-1 1246898-03-2 amino acid sequence; of combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
13007-32-4 combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
10149-14-1 for conjugation of carrier proteins to meningococcal lipooligosaccharides
9033-07-2 Lacto-N-neotetraose biosynthesis glycosyl transferase LgtB; meningococcal lipooligosaccharides derived from strains deficient for
9032-89-7 37277-64-8 219610-16-9 meningococcal lipooligosaccharides derived from strains deficient for
7429-90-5D salts, adjuvant for combination pneumococcal meningococcal vaccine with reduced lacto-N-neotetraose antigenicity
1246900-96-8 1246900-97-9 1246900-98-0 1246900-99-1 1246901-00-7 1246901-01-8 1246901-02-9 1246901-03-0 1246901-04-1 1246901-05-2 1246901-06-3 1246901-07-4 1246901-08-5 1246901-09-6 1246901-10-9 1246901-11-0 1246901-12-1 1246901-13-2 1246901-14-3 1246901-15-4 1246901-16-5 1246901-17-6 1246901-18-7 1246901-19-8 1246901-20-1 1246901-21-2 1246901-22-3 1246901-23-4 1246901-24-5 1246901-25-6 1246901-26-7 1246901-27-8 1246901-28-9 1246901-29-0 1246901-30-3 1246901-31-4 1246901-32-5 1246901-33-6 1246901-34-7 1246901-35-8 1246901-36-9 1246901-37-0 1246901-38-1 1246901-39-2 1246901-40-5 1246901-41-6 1246901-42-7 1246901-43-8 1246901-44-9 1246901-45-0 1246901-47-2 unclaimed protein sequence; combinations including pneumococcal serotype 14 saccharide
219724-66-0 1112044-56-0 64134-30-1 1246901-46-1 848652-29-9 unclaimed sequence; combinations including pneumococcal serotype 14 saccharide

10/7/24 (Item 3 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

152543993 CA: 152(24)543993t PATENT
Purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatography
INVENTOR(AUTHOR): Costantino, Paolo; Berti, Francesco; Kabanova, Anna; Romano, Maria Rosaria
LOCATION: Switz.
ASSIGNEE: Novartis AG
PATENT: PCT International ; WO 201049806 A1 DATE: 20100506
APPLICATION: WO 2009IB7346 (20091027) *US 2008PV108763 (20081027)
PAGES: 56pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:
B01D-0015/36 A I F B 20060101 H EP
B01D-0061/14 A I L B 20060101 H EP
C07K-0001/34 A I L B 20060101 H EP
A61K-0039/09 A I L B 20060101 H EP
C07K-0001/18 A I L B 20060101 H EP
C12P-0019/00 A I L B 20060101 H EP
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CL; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PE; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TJ; TM DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MK; MT; NL; NO; PL; PT; RO; SE; SI; SK; SM; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:

CA209003 Biochemical Methods
IDENTIFIERS: Streptococcus GAS cell wall polysaccharide purifn, anionic exchange chromatog Streptococcus GAS cell wall polysaccharide
DESCRIPTORS:
Polysaccharides...
GASP (group A Streptococcus cell wall polysaccharide); purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
Alcohols...
mobile phase buffer; purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
Filtration...
orthogonal; purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
Anion exchange chromatography... Filtration... Nucleic acids... Proteins... Size-exclusion chromatography... Streptococcus group A... Streptococcus pyogenes... Ultrafiltration...
purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
Filtration...
tangential-flow filtration; purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
CAS REGISTRY NUMBERS:
334756-67-1 anion exchange matrix; purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
9004-61-9 118214-04-3 purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
9004-54-0 uses, gel filtration on; purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.
64-17-5 uses, mobile phase buffer; purification of Streptococcus pyogenes GAS carbohydrate by anionic exchange chromatog.

10/7/25 (Item 4 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

152523448 CA: 152(23)523448r JOURNAL
Neisseria meningitidis GNA2132, a heparin-binding protein that induces protective immunity in humans
AUTHOR(S): Serruto, Davide; Spadafina, Tiziana; Ciucchi, Laura; Lewis, Lisa A.; Ram, Sanjay; Tontini, Marta; Santini, Laura; Biolchi, Alessia; Seib, Kate L.; Giuliani, Marzia M.; Donnelly, John J.; Berti, Francesco; Savino, Silvana; Scarselli, Maria; Costantino, Paolo; Kroll, J. Simon; O'Dwyer, Cliona; Qui, Jiazhou; Plaut, Andrew G.; Moxon, Richard; Rappuoli, Rino; Pizza, Mariagrazia; Arico, Beatrice
LOCATION: Novartis Vaccines and Diagnostics, 53100, Siena, Italy
JOURNAL: Proc. Natl. Acad. Sci. U. S. A. (Proceedings of the National Academy of Sciences of the United States of America) DATE: 2010 VOLUME: 107 NUMBER: 8 PAGES: 3770-3775, S3770/1-S3770/9 CODEN: PNASA6 ISSN: 0027-8424 LANGUAGE: English PUBLISHER: National Academy of Sciences
SECTION:
CA215002 Immunochemistry
CA210XXX Microbial, Algal, and Fungal Biochemistry
IDENTIFIERS: Neisseria GNA2132 protein immunity
DESCRIPTORS:
Protein motifs...
arginine-rich; in heparin-binding activity of GNA2132 of Neisseria
Lactoferrins...
cleavage of neisserial heparin-binding antigen by
Proteoglycans...
heparitin sulfate-containing; GNA2132 protein of Neisseria meningitidis binds to

Transport proteins...
    NalP; cleavage of neisserial heparin-binding antigen by
Human... Neisseria meningitidis...
    Neisseria meningitidis GNA2132 is heparin-binding protein that induces
    protective immunity in humans
Virulence(microbial)...
    neisserial heparin-binding antigen as factor in
Antigens...
    NHBA (neisserial heparin-binding antigen); Neisseria meningitidis
    GNA2132 is heparin-binding protein that induces protective immunity in
    humans
  CAS REGISTRY NUMBERS:
9005-49-6 biological studies, GNA2132 protein of Neisseria meningitidis
    binds to

 10/7/26   (Item 5 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

  152376270   CA: 152(17)376270w   PATENT
  Analysis of Vi saccharide of Salmonella typhi
  INVENTOR(AUTHOR): Berti, Francesco; Micoli, Francesca; Proietti, Daniela
  LOCATION: Italy
  ASSIGNEE: Novartis Vaccines and Diagnostics S.R.L.
  PATENT: Ital. Appl. ; IT 2008MI001079 A1 DATE: 20080913
  APPLICATION: IT 2008MI1079 (20080613)
  PAGES: 36pp. CODEN: ITXXCZ LANGUAGE: English
  PATENT CLASSIFICATIONS:
    CLASS: G01N-000/A
  SECTION:
    CA209003 Biochemical Methods
  IDENTIFIERS: Vi saccharide Salmonella NMR anion exchange HPLC
  DESCRIPTORS:
Electrochemical sensors...
    amperometric, pulsed; in determination of Vi saccharide of Salmonella typhi by
    anion exchange HPLC
Polysaccharides...
    capsular, of Salmonella typhi, deacetylated; determination of Vi saccharide of
    Salmonella typhi by NMR and anion exchange HPLC
Citrobacter freundii...
    determination of Vi saccharide by NMR and anion exchange HPLC
Salmonella typhi... NMR spectroscopy... Anion exchange HPLC...
    determination of Vi saccharide of Salmonella typhi by NMR and anion exchange
    HPLC
Antigens...
    Vi; determination of Vi saccharide of Salmonella typhi by NMR and anion
    exchange HPLC
  CAS REGISTRY NUMBERS:
1310-73-2 analysis, deacetylation of Vi saccharide of Salmonella typhi by
76-05-1 analysis, hydrolysis of Vi saccharide of Salmonella typhi by
14014-06-3 deacetylation of Vi saccharide of Salmonella typhi by
77-92-9 64-17-5 uses, internal reference standard for determination of Vi
saccharide of
    Salmonella typhi by NMR

 10/7/27   (Item 6 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

  152045529   CA: 152(2)45529c   PATENT

Conjugated Vi saccharides for vaccines against typhoid fever
INVENTOR(AUTHOR): Micoli, Francesca; Costantino, Paolo; Berti, Francesco
LOCATION: Switz.
ASSIGNEE: Novartis AG
PATENT: PCT International ; WO 2009150543 A2 DATE: 20091217
APPLICATION: WO 2009IB6285 (20090612) *GB 200810894 (20080613)
PAGES: 42pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:
A61K-0047/48 A I F B 20060101 H EP
A61P-0043/00 A N L B 20060101 H EP
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CL; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PE; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TJ; TM DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MK; MT; NL; NO; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA263003 Pharmaceuticals
CA215XXX Immunochemistry
IDENTIFIERS: Salmonella capsular polysaccharide Vi protein conjugate typhoid vaccine
DESCRIPTORS:
Polysaccharides...
capsular, Vi; conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
Salmonella typhi... Typhoid fever... Antigens... Immune adjuvants...
Pharmaceutical carriers... Drug delivery systems...
conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
Polysaccharides...
conjugates, with carrier proteins; conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
Toxoids...
tetanus, conjugates with Vi polysaccharide; conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
Vaccines...
typhoid fever; conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
CAS REGISTRY NUMBERS:
1892-57-5 conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
600173-37-3DP conjugates with Vi Salmonella polysaccharides, conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines
1071-93-8 linker; conjugates of Vi Salmonella polysaccharides with carrier proteins for typhoid vaccines

10/7/28 (Item 7 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

151156623 CA: 151(7)156623c PATENT
Lipopolysaccharide decontamination during the purification of biopharmaceuticals
INVENTOR(AUTHOR): Costantino, Paolo
LOCATION: Switz.

ASSIGNEE: Novartis AG
PATENT: PCT International ; WO 200987571 A2 DATE: 20090716
APPLICATION: WO 2009IB133 (20090107) *GB 2008228 (20080107)
PAGES: 13pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:
B01J-0020/26 A I F B 20060101 H EP
B01J-0020/28 A I L B 20060101 H EP
B01D-0061/00 A I L B 20060101 H EP
B01D-0067/00 A I L B 20060101 H EP
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TJ; TM; TN; TR DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MK; MT; NL; NO; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA263008 Pharmaceuticals
CA210XXX Microbial, Algal, and Fungal Biochemistry
IDENTIFIERS: lipopolysaccharide decontamination biopharmaceutical purifn
DESCRIPTORS:
Drugs...
biopharmaceuticals; lipopolysaccharide decontamination during the purification of biopharmaceuticals
Purification... Decontamination... Lipopolysaccharides... Polymers... Gram-negative bacteria... Proteobacteria... Cyanobacteria... Spirochaeta... Green sulfur bacteria... Chloroflexi... Crenarchaeota... Eubacteria... Bacilli... Membranes,nonbiological...
lipopolysaccharide decontamination during the purification of biopharmaceuticals
CAS REGISTRY NUMBERS:
25067-34-9 lipopolysaccharide decontamination during purification of biopharmaceuticals
71927-65-6 1069-03-0 lipopolysaccharide decontamination during the purification of biopharmaceuticals

10/7/29 (Item 8 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

151099686 CA: 151(5)99686z PATENT
Production and purification of Streptococcus agalactiae capsular polysaccharides
INVENTOR(AUTHOR): Costantino, Paolo; Norelli, Francesco; Berti, Francesco ; Cicala, Concetta Maria; Bazzocchi, Giulia; Fontani, Silvia; Olivieri, Roberto
LOCATION: Switz.
ASSIGNEE: Novartis A.-G.
PATENT: PCT International ; WO 200981276 A2 DATE: 20090702
APPLICATION: WO 2008IB3729 (20081219) *US 2007PV8941 (20071220) *GB 200818453 (20081008)
PAGES: 159pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:
C12N-0001/20 A I F B 20060101 H EP
A61K-0039/04 A I L B 20060101 H EP
C12P-0019/04 A I L B 20060101 H EP

DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TJ; TM; TN; TR DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; NO; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM

SECTION:

CA216002 Fermentation and Bioindustrial Chemistry

CA210XXX Microbial, Algal, and Fungal Biochemistry

IDENTIFIERS: Streptococcus capsular polysaccharide fermn purifn

DESCRIPTORS:

Lipopolysaccharides...

bacterial; production and purification of Streptococcus agalactiae capsular polysaccharides

Polysaccharides...

capsular; production and purification of Streptococcus agalactiae capsular polysaccharides

Detergents...

cationic; production and purification of Streptococcus agalactiae capsular polysaccharides

Culture media...

defined; production and purification of Streptococcus agalactiae capsular polysaccharides

Yeast...

extract; production and purification of Streptococcus agalactiae capsular polysaccharides

Fermentation...

fed-batch; production and purification of Streptococcus agalactiae capsular polysaccharides

Growth,microbial...

kinetics; production and purification of Streptococcus agalactiae capsular polysaccharides

Filtration...

microfiltration; production and purification of Streptococcus agalactiae capsular polysaccharides

Acetylation...

N-; production and purification of Streptococcus agalactiae capsular polysaccharides

Streptococcus agalactiae... pH... Temperature effects,biological... Mineral elements... Vitamins... Amino acids... Filtration... Precipitation(chemical)... Solubilization... Ultrafiltration... Nucleic acids... Vaccines... Culture media... Proteins... Pressure... Nutrition,microbial... Centrifugation... Dialysis... Sterilization and Disinfection... Sialic acids...

production and purification of Streptococcus agalactiae capsular polysaccharides

Chemical engineering design...

scale-up; production and purification of Streptococcus agalactiae capsular polysaccharides

CAS REGISTRY NUMBERS:

7782-44-7 processes, dissolved; production and purification of Streptococcus agalactiae capsular polysaccharides

50-99-7 83-88-5 59-30-3 7647-14-5 56-41-7 74-79-3 56-85-9 56-40-6 71-00-1 73-32-5 61-90-5 56-87-1 63-68-3 63-91-2 147-85-3 56-45-1 72-19-5 73-22-3 72-18-4 56-84-8 56-86-0 60-18-4 processes, production and purification of Streptococcus agalactiae capsular polysaccharides

58-85-5 98-92-0 137-08-6 67-03-8 58-56-0 7778-77-0 118830-14-1 10049-21-5 7758-11-4 52-89-1 108-24-7 production and purification of Streptococcus agalactiae capsular polysaccharides

7440-44-0 uses, activated; production and purification of Streptococcus agalactiae capsular polysaccharides
64-17-5 10043-52-4 uses, production and purification of Streptococcus agalactiae capsular polysaccharides

10/7/30 (Item 9 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

150166205 CA: 150(9)166205m PATENT
Vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
INVENTOR(AUTHOR): Bigio, Massimo; Averani, Giovanni; Norelli, Francesco; Berti, Francesco; Bellucci, Cinzia
LOCATION: Switz.
ASSIGNEE: Novartis AG
PATENT: PCT International ; WO 200910877 A2 DATE: 20090122
APPLICATION: WO 2008IB2690 (20080717) *GB 200713880 (20070717)
PAGES: 54pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-000/A
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TJ; TM; TN; TR DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; NO; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA215002 Immunochemistry
CA209XXX Biochemical Methods
CA263XXX Pharmaceuticals
IDENTIFIERS: saccharide antigen carrier protein conjugate hydroxyapatite binding vaccine purifn
DESCRIPTORS:
Drug delivery systems... Drugs... Immunostimulants...
adjuvants; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Purification...
affinity; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Toxins...
B; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Polysaccharides...
capsular, desialylated; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Proteins...
carriers; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Antigens... Proteins... Polysaccharides...
conjugates; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Proteins...
contaminant; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Pharmaceutical excipients...

diluents; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Toxoids...
diphtheria; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Particles...
hydroxylapatite; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Vaccines...
influenza; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Biological transport...
iron; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Toxins...
pertussis, protein; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Buffers...
phosphate; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Hemolysins...
pneumolysins; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Epitopes...
poly-; N19; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Epitopes...
poly-; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Proteins...
PspA (pneumococcal surface protein A); vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Proteins...
recombinant; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Streptococcus agalactiae...
serotype V; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Vaccines...
synthetic; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Toxoids...
tetanus; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Toxins...
toxin A; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
Vaccines... Carbohydrates... Glycoconjugates... Antigens... Carriers... Affinity chromatography... Neisseria meningitidis... Outer membrane proteins... Heat-shock proteins... Cytokines... Hormones,animal... Lymphokines... Growth factors,animal... Protein D... Haemophilus influenzae ... Clostridium difficile... Streptococcus pneumoniae... Pseudomonas aeruginosa... Staphylococcus aureus... Enterococcus faecalis... Enterococcus faecium... Yersinia enterocolitica... Vibrio cholerae... Salmonella typhi... Linking agents... Pharmaceutical gels... Drug delivery systems... Pharmaceutical carriers... Infection... Bacterial infection...
vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
pH...
6.5-7.5; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification

CAS REGISTRY NUMBERS:
7439-89-6P biological studies, transport; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
7664-38-2D salts, buffer systems; vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification
1306-06-5 60073-37-3P 9001-63-2 vaccines comprising saccharide antigen conjugated with hydroxyapatite-binding carrier protein to facilitate purification

10/7/31 (Item 10 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

150041363 CA: 150(3)41363e PATENT
Formulation of meningitis vaccines
INVENTOR(AUTHOR): Contorni, Mario; Costantino, Paolo
LOCATION: Switz.
ASSIGNEE: Novartis AG
PATENT: PCT International ; WO 2008149238 A2 DATE: 20081211
APPLICATION: WO 2008IB2121 (20080604) *US 2007PV933235 (20070604)
PAGES: 28pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-000/A
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; NO; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA263006 Pharmaceuticals
CA215XXX Immunochemistry
IDENTIFIERS: meningitis vaccine formulation
DESCRIPTORS:
Immunostimulants...
adjuvants; formulation of meningitis vaccines
Human poliovirus...
antigens of, conjugates with saccharides; formulation of meningitis vaccines
Pertussis...
conjugates with saccharides; formulation of meningitis vaccines
Toxoids...
diphtheria, conjugates with saccharides; formulation of meningitis vaccines
Vaccines...
diphtheria-tetanus-acellular pertussis-inactivated polio virus; formulation of meningitis vaccines
Vaccines...
diphtheria-tetanus-acellular pertussis-inactivated polio virus-Haemophilus influenzae type b; formulation of meningitis vaccines
Human... Meningitis... Pharmaceutical emulsions... Stabilizing agents...
Vaccines...
formulation of meningitis vaccines
Neisseria meningitidis...
group A, saccharides of, conjugates of; formulation of meningitis

vaccines
Neisseria meningitidis...
group C, saccharides of, conjugates of; formulation of meningitis vaccines
Neisseria meningitidis...
group W-135, saccharides of, conjugates of; formulation of meningitis vaccines
Neisseria meningitidis...
group Y, saccharides of, conjugates of; formulation of meningitis vaccines
Hepatitis B antigens...
HBsAg (hepatitis B surface antigen), conjugates with saccharides; formulation of meningitis vaccines
Neisseria meningitidis...
saccharides of, conjugates of; formulation of meningitis vaccines
Toxoids...
tetanus, conjugates with saccharides; formulation of meningitis vaccines
Antibodies and Immunoglobulins...
to PRP; formulation of meningitis vaccines
Haemophilus influenzae...
type b, saccharides of, conjugates of; formulation of meningitis vaccines
CAS REGISTRY NUMBERS:
600173-37-3D conjugates with saccharides, formulation of meningitis vaccines
7784-30-7 formulation of meningitis vaccines

10/7/32 (Item 11 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

149174110 CA: 149(8)174110w PATENT
Preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis
INVENTOR(AUTHOR): Bardotti, Angela; Berti, Francesco; Costantino, Paolo
LOCATION: Switz.
ASSIGNEE: Novartis AG
PATENT: PCT International ; WO 200884411 A2 DATE: 20080717
APPLICATION: WO 2008IB1116 (20080111) *GB 2007562 (20070111)
PAGES: 84pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: C07H-000/A
DESIGNATED COUNTRIES: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; NO; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA215002 Immunochemistry
CA201XXX Pharmacology
CA210XXX Microbial, Algal, and Fungal Biochemistry
CA233XXX Carbohydrates
CA263XXX Pharmaceuticals
IDENTIFIERS: diphtheria toxin vaccine immunization Neisseria meningitidis capsular polysaccharide, vaccine immunization Neisseria meningitidis

capsular polysaccharide prepn human antibacterial, aminodeoxy oligosaccharide capsular polysaccharide protein conjugate adjuvant antigen prepn

DESCRIPTORS:

Immunostimulants...
adjuvants; preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

Polysaccharides,biological studies...
capsular; preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

Antibodies and Immunoglobulins...
IgG; preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

Neisseria meningitidis... Antibacterial agents... Bacterial infection...

Antigens... Human... Immunization... Oligosaccharides,biological studies...

Drugs... Toxins... Vaccines...
preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

CAS REGISTRY NUMBERS:

1039052-04-4D acetylated, derivs., repeating unit; preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

1039052-05-5D 1039052-06-6D CRM 197 derivative, preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

600173-37-3 1039052-05-5P 1039052-06-6P preparation of modified protein-conjugated capsular oligosaccharides and polysaccharides in study of vaccine for Neisseria meningitidis

10/7/33 (Item 12 from file: 399)

DIALOG(R)File 399:CA SEARCH(R)

147474589 CA: 147(22)474589y PATENT

Separation of conjugated and unconjugated components in vaccines

INVENTOR(AUTHOR): Berti, Francesco; Galletti, Bruno; Parente, Pierino; Costantino, Paolo

LOCATION: Italy

ASSIGNEE: Novartis Vaccines and Diagnostics Srl

PATENT: PCT International ; WO 2007122512 A2 DATE: 20071101

APPLICATION: WO 2007IB1855 (20070321) *GB 20065757 (20060322)

PAGES: 33pp. CODEN: PIXXD2 LANGUAGE: English

PATENT CLASSIFICATIONS:

CLASS: A61K-000/A

DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT; TZ; UA; UG DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM

SECTION:

CA263003 Pharmaceuticals

IDENTIFIERS: antigen saccharide conjugate basic salt pptn vaccine quality control

DESCRIPTORS:

Salts,uses...
basic, lyotropic; separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
Streptococcus agalactiae...
capsular saccharides; separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
Polysaccharides,biological studies...
conjugates; separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
Toxins...
diphtheria; separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
Carbohydrates,biological studies... Polysaccharides,biological studies...
Glycoconjugates... Antigens... Vaccines... Sialic acids...
Precipitation(chemical)... Basicity... Quality control...
separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
Toxoids...
tetanus; separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
CAS REGISTRY NUMBERS:
7664-38-2D acidic alkali metal salts, separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
7664-93-9D 64-19-7D 77-92-9D 87-69-4D alkali metal salts, separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines
600173-37-3 7758-11-4 separation of conjugated and unconjugated saccharides using basic reagents for quality control of vaccines

10/7/34 (Item 13 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

146294161 CA: 146(15)294161y PATENT
Zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
INVENTOR(AUTHOR): Telford, John; Berti, Francesco; Wack, Andreas
LOCATION: Italy
ASSIGNEE: Novartis Vaccines and Diagnostics S.r.l.
PATENT: PCT International ; WO 200723386 A2 DATE: 20070301
APPLICATION: WO 2006IB2833 (20060824) *GB 200517353 (20050824) *GB 20067738 (20060419)
PAGES: 56pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: C07H-000/A
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LV; LY; MA; MD; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA215002 Immunochemistry
CA263XXX Pharmaceuticals
IDENTIFIERS: zwitterionization bacterial capsular saccharide antigen T cell activation vaccine
DESCRIPTORS:

T cell(lymphocyte)...
activation; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Infection...
bacterial; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Polysaccharides,biological studies...
capsular; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Hydrolysis...
galactose unit; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Neisseria meningitidis...
group A; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Neisseria meningitidis...
group B; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Neisseria meningitidis...
group C; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Neisseria meningitidis...
group W-135; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Neisseria meningitidis...
group Y; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Streptococcus group B...
Ia, Ib, II, III and V; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Acetyl group...
N-; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Functional groups...
neutral, anionic and cationic; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Physical and chemical properties...
pKb; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Amines,biological studies...
secondary; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Cell activation...
T cell; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Carbohydrates,biological studies... Polysaccharides,biological studies...
Oligosaccharides,biological studies...
zwitterionic; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
Eubacteria... Antigens... Zwitterions... Carboxyl group... Amino group...
Streptococcus agalactiae... Monosaccharides... Neisseria meningitidis...
Aldehydes,biological studies... Formyl group... Streptococcus pneumoniae...
Bacteroides fragilis... Vaccines... T cell(lymphocyte)...
zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
CAS REGISTRY NUMBERS:
50-00-0 127-17-3 64-19-7 24959-67-9 59-23-4 10028-15-6 10102-43-9

biological studies, zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
131-48-6 7512-17-6 moiety; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
927927-51-3 927927-52-4 927927-53-5 927927-54-6 927927-55-7 927927-56-8 927927-57-9 927927-58-0 927927-59-1 927927-60-4 927927-61-5 927927-62-6 927927-63-7 927927-64-8 927927-65-9 927927-66-0 927927-67-1 927927-68-2 unclaimed sequence; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
927927-69-3 Unclaimed; zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines
7790-28-5 151-51-9 2564-83-2 14380-61-1 52720-51-1 9028-79-9 zwitterionization to convert T-independent into T-dependent immunogenic bacterial capsular saccharides for use as vaccines

10/7/35 (Item 14 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

145487661 CA: 145(25)487661z PATENT
Preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
INVENTOR(AUTHOR): Oscarson, Stefan; Teodorovic, Peter; Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Novartis Vaccines and Diagnostics S.r.l.; Stockholm University
PATENT: PCT International ; WO 2006120576 A2 DATE: 20061116
APPLICATION: WO 2006IB1703 (20060508) *US 2005PV678289 (20050506)
PAGES: 87pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:

C07H-0011/04	A	I	F	B	20060101	H	EP
A61K-0039/095	A	I	L	B	20060101	H	EP
A61P-0031/04	A	I	L	B	20060101	H	EP
C07H-0007/00	A	I	L	B	20060101	H	EP
C07H-0013/00	A	I	L	B	20060101	H	EP
C07H-0015/04	A	I	L	B	20060101	H	EP
A61K-0031/702	A	I	L	B	20060101	H	EP

DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; LY; MA; MD; MG; MK; MN; MW; MX; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SM; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA215002 Immunochemistry
CA204XXX Toxicology
CA263XXX Pharmaceuticals
IDENTIFIERS: Neisseria meningitidis oligosaccharide protein toxin conjugate meningitis A vaccine
DESCRIPTORS:
Immunostimulants...
adjuvants; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines

Functional groups...
    alkoxy groups; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Functional groups...
    alkoxycarbonyl groups; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Streptococcus pneumoniae...
    antigen; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Functional groups...
    azido group; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxins...
    bacterial; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Reagents...
    bifunctional; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Oligosaccharides,biological studies... Proteins... Antigens... Toxins...
Polysaccharides,biological studies...
    conjugates; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Carboxylic acids,biological studies...
    dicarboxylic; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxins...
    diphtheria, conjugates; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxoids...
    diphtheria; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Neisseria meningitidis...
    group A; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Neisseria meningitidis...
    group B; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Neisseria meningitidis...
    group C; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Neisseria meningitidis...
    group W-135; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Neisseria meningitidis...
    group Y; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxins...
    heat-labile; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Reaction...
    Mitsunobu; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxins...
    pertussis; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Functional groups...
    phosphonate group; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Oligosaccharides,biological studies... Proteins... Antigens... Escherichia coli... Pseudomonas aeruginosa... Exotoxins... Hydroxyl group... Amino group... Acyl groups... Protective groups... Amide group...
Carbohydrates,biological studies... Vaccines... Meningitis... Drug delivery

systems... Electrophiles... Nucleophiles... Antibodies and Immunoglobulins ... Albumins,biological studies... Polysaccharides,biological studies... Alums...
preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxins...
T; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Toxins...
tetanus; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
Eubacteria...
toxin; preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
CAS REGISTRY NUMBERS:
3458-28-4D -containing oligosaccharides, preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
124-04-9 biological studies, preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
172223-08-4 172223-09-5P 914641-02-4P 914641-03-5P 914641-04-6P 914641-05-7P 914641-06-8P 914641-07-9 497096-20-5 914641-08-0P 914641-09-1P 914641-10-4P 914641-11-5P 914641-12-6P 914641-13-7P 914641-14-8P 68733-20-0 402831-54-3P 870073-99-7P 870074-00-3P 870074-01-4P 870074-02-5P 870074-04-7P 870074-06-9P 870074-08-1P 870074-12-7P 870074-14-9P 870074-16-1P 870074-18-3P 497096-09-0P 870074-19-4P 870074-20-7P 870074-21-8P 870074-23-0P 870074-25-2P 870074-27-4P 914641-15-9P 914641-17-1P 870074-31-0P 600173-37-3 505-48-6 2892-51-5 preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines
914641-18-2DP protein conjugates, preparation of oligosaccharides conjugated with proteins or toxins as meningitidis A vaccines

10/7/36 (Item 15 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

145209382 CA: 145(11)209382h PATENT
Conjugation of streptococcal capsular saccharides
INVENTOR(AUTHOR): Berti, Francesco
LOCATION: Italy
ASSIGNEE: Chiron Srl
PATENT: PCT International ; WO 200682530 A2 DATE: 20060810
APPLICATION: WO 2006IB756 (20060201) *GB 20052095 (20050201)
PAGES: 48pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:
A61K-0047/48 A I F B 20060101 H EP
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; LY; MA; MD; MG; MK; MN; MW; MX; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SM; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA216002 Fermentation and Bioindustrial Chemistry
CA233XXX Carbohydrates
CA244XXX Industrial Carbohydrates

IDENTIFIERS: streptococcal capsular saccharide conjugation
DESCRIPTORS:
Polysaccharides,reactions...
capsular; conjugation of streptococcal capsular saccharides
Streptococcus agalactiae... Capsule(microbial)... Oxidation... Linking agents... Sialic acids... Human... Reducing agents... Vaccines...
conjugation of streptococcal capsular saccharides
Proteins...
D, as a carrier mol.; conjugation of streptococcal capsular saccharides
Toxoids...
diphtheria, as a carrier mol.; conjugation of streptococcal capsular saccharides
Antigens...
epitope; conjugation of streptococcal capsular saccharides
Proteins...
from Streptococcus agalactiae, as a carrier mol.; conjugation of streptococcal capsular saccharides
Amines,reactions...
primary; conjugation of streptococcal capsular saccharides
Amination...
reductive; conjugation of streptococcal capsular saccharides
Albumins,reactions...
serum, human, as a carrier mol.; conjugation of streptococcal capsular saccharides
Proteins...
synthetic, multiple CD4+ epitopes, as a carrier mol.; conjugation of streptococcal capsular saccharides
Toxoids...
tetanus, as a carrier mol.; conjugation of streptococcal capsular saccharides
CAS REGISTRY NUMBERS:
7790-28-5 6066-82-6 59156-70-6 conjugation of streptococcal capsular saccharides
7664-41-7 processes, conjugation of streptococcal capsular saccharides
14798-03-9D salts, conjugation of streptococcal capsular saccharides
15056-35-6D salts, salts; conjugation of streptococcal capsular saccharides

10/7/37 (Item 16 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

145209376 CA: 145(11)209376j PATENT
Purification of streptococcal capsular polysaccharide
INVENTOR(AUTHOR): Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Chiron Srl
PATENT: PCT International ; WO 200682527 A2 DATE: 20060810
APPLICATION: WO 2006IB626 (20060201) *GB 20052096 (20050201)
PAGES: 39pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
IPCR/8 + Level Value Position Status Version Action Source Office:
C08B-0037/00 A I F B 20060101 H EP
C12P-0019/04 A I L B 20060101 H EP
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; LY; MA; MD; MG; MK; MN; MW; MX; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SM; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA DESIGNATED REGIONAL: AT; BE; BG; CH ; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC;

NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
SECTION:
CA216001 Fermentation and Bioindustrial Chemistry
CA233XXX Carbohydrates
CA244XXX Industrial Carbohydrates
IDENTIFIERS: streptococcal capsular polysaccharide purifn
DESCRIPTORS:
Extraction...
base; purification of streptococcal capsular polysaccharide
Polysaccharides,preparation...
capsular; purification of streptococcal capsular polysaccharide
Detergents...
cationic; purification of streptococcal capsular polysaccharide
Hydrolysis...
chemical; purification of streptococcal capsular polysaccharide
Hydrolysis...
enzymic; purification of streptococcal capsular polysaccharide
Filtration...
microfiltration; purification of streptococcal capsular polysaccharide
Streptococcus agalactiae... Capsule(microbial)... Cations...
Alcohols,processes... Precipitation(chemical)... Separation...
Centrifugation... Fermentation... Ultrafiltration... Solubilization...
Proteins... Nucleic acids... Vaccines...
purification of streptococcal capsular polysaccharide
Filtration...
tangential-flow filtration; purification of streptococcal capsular polysaccharide
CAS REGISTRY NUMBERS:
64-17-5 67-63-0 16397-91-4 22537-22-0 14127-61-8 10043-52-4
processes, purification of streptococcal capsular polysaccharide
55466-22-3 9012-33-3 9025-82-5 57-09-0 10549-76-5 purification of
streptococcal capsular polysaccharide

10/7/38 (Item 17 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

143005815 CA: 143(1)5815a JOURNAL
Size determination of bacterial capsular oligosaccharides used to prepare conjugate vaccines against Neisseria meningitidis groups Y and W135
AUTHOR(S): Bardotti, Angela; Averani, Giovanni; Berti, Francesco; Berti, Stefania; Galli, Chiara; Giannini, Sara; Fabbri, Barbara; Proietti, Daniela ; Ravenscroft, Neil; Ricci, Stefano
LOCATION: Chiron Vaccines, I-53100, Siena, Italy
JOURNAL: Vaccine (Vaccine) DATE: 2005 VOLUME: 23 NUMBER: 16 PAGES: 1887-1899 CODEN: VACCDE ISSN: 0264-410X PUBLISHER ITEM IDENTIFIER: 0264-410X(04)00790-X LANGUAGE: English PUBLISHER: Elsevier B.V.
SECTION:
CA215002 Immunochemistry
IDENTIFIERS: size detn bacteria capsule oligosaccharide Neisseria vaccine
DESCRIPTORS:
Polymerization...
average degree of; size determination of bacterial capsular oligosaccharides used
to prepare conjugate vaccines against Neisseria meningitidis groups Y and W135
Oligosaccharides,biological studies... Vaccines... Neisseria meningitidis ... Anion exchange chromatography...
size determination of bacterial capsular oligosaccharides used to prepare

conjugate vaccines against Neisseria meningitidis groups Y and W135

10/7/39 (Item 18 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

142461845 CA: 142(25)461845a JOURNAL
The concept of "tailor-made", protein-based, outer membrane vesicle vaccines against meningococcal disease
AUTHOR(S): Holst, Johan; Feiring, Berit; Naess, Lisbeth M.; Norheim, Gunnstein; Kristiansen, Paul; Hoiby, E. Arne; Bryn, Klaus; Oster, Philipp; Costantino, Paolo; Taha, Muhamed-Kheir; Alonso, Jean-Michel; Caugant, Dominique A.; Wedege, Elisabeth; Aaberge, Ingeborg S.; Rappuoli, Rino; Rosenqvist, Einar
LOCATION: Norwegian Institute of Public Health, Oslo, Norway
JOURNAL: Vaccine (Vaccine) DATE: 2005 VOLUME: 23 NUMBER: 17-18
PAGES: 2202-2205 CODEN: VACCDE ISSN: 0264-410X
PUBLISHER ITEM IDENTIFIER: 0264-410X(05)00063-0 LANGUAGE: English
PUBLISHER: Elsevier B.V.
SECTION:
CA215002 Immunochemistry
IDENTIFIERS: Neisseria meningitidis vaccine outer membrane vesicle
DESCRIPTORS:
Infection...
bacterial; concept of tailor-made protein-based outer membrane vesicle vaccines against meningococcal disease
Neisseria meningitidis... Vaccines... Human...
concept of tailor-made protein-based outer membrane vesicle vaccines against meningococcal disease
Cell wall...
outer membrane; concept of tailor-made protein-based outer membrane vesicle vaccines against meningococcal disease
Organelle...
vesicle; concept of tailor-made protein-based outer membrane vesicle vaccines against meningococcal disease

10/7/40 (Item 19 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

142372474 CA: 142(20)372474m PATENT
Acetylated meningococcal capsular oligosaccharides
INVENTOR(AUTHOR): Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Chiron S.r.l.
PATENT: PCT International ; WO 200533148 A1 DATE: 20050414
APPLICATION: WO 2004IB3366 (20041004) *GB 200323103 (20031002)
PAGES: 42 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: C08B-037/00A; A61K-039/095B; A61K-031/715B
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NA; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA; ZM; ZW DESIGNATED REGIONAL: BW; GH; GM; KE; LS; MW; MZ ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IT; LU; MC; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG

SECTION:
CA215002 Immunochemistry
IDENTIFIERS: acetylated capsular polysaccharide Neisseria vaccine
DESCRIPTORS:
Human...
acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis for vaccination
Polysaccharides,biological studies...
capsular, fragments, conjugates; for vaccination against serogroups W135 and Y of Neisseria meningitidis
Proteins...
D, conjugates with acetylated sialate oligosaccharides; for vaccination against serogroups W135 and Y of Neisseria meningitidis
Toxoids...
diphtheria, conjugates with acetylated sialate oligosaccharides; for vaccination against serogroups W135 and Y of Neisseria meningitidis
Neisseria meningitidis...
group A; vaccination with acetylated sialate oligosaccharides of serogroups W135 and Y of N. meningitidis and saccharide antigen from
Neisseria meningitidis...
group W-135; acetylated sialate oligosaccharide conjugates for vaccination against
Neisseria meningitidis...
group Y; acetylated sialate oligosaccharide conjugates for vaccination against
Antigens...
microbial; in combination vaccination with acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis
Vaccines...
of acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis
Acetyl group...
of Neisseria meningitidis capsular polysaccharide affects immunogenicity
Toxoids...
tetanus, conjugates with acetylated sialate oligosaccharides; for vaccination against serogroups W135 and Y of Neisseria meningitidis
Streptococcus pneumoniae... Hepatitis A virus... Hepatitis B virus...
Bordetella pertussis... Human poliovirus...
vaccination with acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis and antigen from
Antibodies and Immunoglobulins...
vaccination with acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis for elicitation of
Meningitis...
vaccination with acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis for protection against
Sialooligosaccharides...
7-acetylated sialate- or 9-acetylated sialate-containing, conjugates; for vaccination against serogroups W135 and Y of Neisseria meningitidis
CAS REGISTRY NUMBERS:
736884-44-9DP 849592-59-2DP acetyl derivs., carrier protein conjugates, repeating unit; acetylated sialate oligosaccharides of serogroups W135 and Y of Neisseria meningitidis for vaccination
600173-37-3D conjugates with acetylated sialate oligosaccharides, for vaccination against serogroups W135 and Y of Neisseria meningitidis

10/7/41 (Item 20 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

141189619 CA: 141(12)189619c PATENT
Injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against multiple meningococcal serogroups
INVENTOR(AUTHOR): Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Chiron SRL
PATENT: PCT International ; WO 200467030 A2 DATE: 20040812
APPLICATION: WO 2004IB651 (20040130) *GB 20032217 (20030130) *GB 200323101 (20031002)
PAGES: 46 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-039/095A; A61K-039/39B; C07K-014/22B; A61K-039/02B; A61K-039/09B
DESIGNATED COUNTRIES: AE; AE; AG; AL; AL; AM; AM; AM; AT; AT; AU; AZ; AZ; BA; BB; BG; BG; BR; BR; BW; BY; BY; BZ; BZ; CA; CH; CN; CN; CO; CO; CR; CR; CU; CU; CZ; CZ; DE; DE; DK; DK; DM; DZ; EC; EC; EE; EE; EG; ES; ES; FI; FI; GB; GD; GE; GE; GH; GM; HR; HR; HU; HU; ID; IL; IN; IS; JP; JP; KE; KE; KG; KG; KP; KP; KP; KR; KR; KZ; KZ; KZ; LC; LK; LR; LS; LS; LT; LU; LV; MA; MD; MD; MG; MK; MN; MW; MX; MX; MZ; MZ; NA; NI
SECTION:
CA215002 Immunochemistry
CA263XXX Pharmaceuticals
IDENTIFIERS: Neisseria meningitidis A B C W135 Y capsular saccharide, Haemophilus influenzae Streptococcus pneumoniae Neisseria meningitidis meningococcal vaccine injection
DESCRIPTORS:
Immunostimulants...
adjuvants; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Meningitis...
bacterial; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Polysaccharides,biological studies...
capsular; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Drug delivery systems...
carriers; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Proteins... Antigens...
conjugates; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Proteins...
D; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Toxins...
diphtheria, conjugates; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Toxoids...
diphtheria; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Drug delivery systems...
freeze-dried; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines

against bacterial meningitis
Neisseria meningitidis...
group A; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Neisseria meningitidis...
group B; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Neisseria meningitidis...
group C; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Neisseria meningitidis...
group W-135; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Neisseria meningitidis...
group Y; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Vaccines... Eubacteria... Neisseria meningitidis... Streptococcus pneumoniae... Oligosaccharides,biological studies... Hydroxyl group...
Protective groups... Antibodies and Immunoglobulins... Antibacterial agents ... Fusion proteins(chimeric proteins)... Test kits... Protein sequences...
Human...
injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Drug delivery systems...
injections, i.m.; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Drug delivery systems...
injections, s.c.; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Drug delivery systems...
injections; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Drug delivery systems...
liqs.; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
LytA; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
LytB; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
LytC; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
NadA (Neisserial adhesin A); injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...

phtA; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
phtB; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
phtD; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
phtE; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
SpsA; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
Sp101; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
Sp125; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
Sp128; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
Sp130; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Toxoids...
tetanus; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Haemophilus influenzae...
type b; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
287; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
741; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
936; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
Antigens...
953; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis

CAS REGISTRY NUMBERS:

738308-30-0P 738308-31-1P 738308-32-2P 738308-33-3P 738308-34-4P
738308-35-5P 738308-36-6P 738308-37-7P 738308-38-8P 738308-39-9P

738308-40-2P amino acid sequence; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
7429-90-5D salts, injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against bacterial meningitis
219724-66-0 unclaimed sequence; injectable immunogenic composition comprising capsular saccharides from Neisseria meningitidis B, A, C, W135 and Y as vaccines against multiple meningococcal serogroups

10/7/42 (Item 21 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

141052579 CA: 141(4)52579v JOURNAL
Modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the trimethyl chitosan delivery system
AUTHOR(S): Baudner, Barbara C.; Morandi, Maurizio; Giuliani, Marzia M.; Verhoef, J. Coos; Junginger, Hans E.; Costantino, Paolo; Rappuoli, Rino; Del Giudice, Giuseppe
LOCATION: Research Center, Chiron Srl, 53100, Siena, Italy
JOURNAL: J. Infect. Dis. (Journal of Infectious Diseases) DATE: 2004
VOLUME: 189 NUMBER: 5 PAGES: 828-832 CODEN: JIDIAQ ISSN: 0022-1899
LANGUAGE: English PUBLISHER: University of Chicago Press
SECTION:
CA215003 Immunochemistry
IDENTIFIERS: vaccine Neisseria LTK63 adjuvant trimethyl chitosan delivery system
DESCRIPTORS:
Immunostimulants...
adjuvants; modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
Vaccines...
conjugate; modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
Neisseria meningitidis...
group C; modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
Antibodies and Immunoglobulins...
IgG; modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
Drug delivery systems...
modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
Immunization...
vaccination; modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
CAS REGISTRY NUMBERS:
226416-68-8 modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system
9012-76-4D tri-Me derivs., modulation of immune response to group C meningococcal conjugate vaccine given intranasally to mice together with the LTK63 mucosal adjuvant and the tri-Me chitosan delivery system

10/7/43 (Item 22 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

140240996 CA: 140(15)240996g PATENT
Modified saccharides and their protein conjugates
INVENTOR(AUTHOR): Giannozzi, Aldo; Averani, Giovanni; Norelli, Francesco; Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Chiron S.r.l.
PATENT: PCT International ; WO 200419992 A1 DATE: 20040311
APPLICATION: WO 2003IB4194 (20030901) *GB 200220198 (20020830)
PAGES: 30 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-047/48A; C07H-013/12B; A61K-031/715B
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU DESIGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IT; LU; MC; NL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG
SECTION:
CA263003 Pharmaceuticals
CA215XXX Immunochemistry
CA233XXX Carbohydrates
CA234XXX Amino Acids, Peptides, and Proteins
IDENTIFIERS: capsular oligosaccharide linker protein conjugate immunogen, Neisseria capsular polysaccharide protein conjugate meningitis
DESCRIPTORS:
Immunostimulants...
adjuvants; preparation of saccharide-protein conjugates with improved immunogenicity
Meningitis...
bacterial; preparation of saccharide-protein conjugates with improved immunogenicity
Oligosaccharides,biological studies... Polysaccharides,biological studies ...
capsular, conjugates with proteins; preparation of saccharide-protein conjugates with improved immunogenicity
Proteins... Toxins... Toxoids...
conjugates with capsular saccharides; preparation of saccharide-protein conjugates with improved immunogenicity
Proteins...
CRM197, conjugates with capsular saccharides; preparation of saccharide-protein conjugates with improved immunogenicity
Toxins... Toxoids...
diphtheria, conjugates with capsular saccharides; preparation of saccharide-protein conjugates with improved immunogenicity
Neisseria meningitidis...
group A; preparation of saccharide-protein conjugates with improved immunogenicity
Vaccines... Antigens...
preparation of saccharide-protein conjugates with improved immunogenicity
Amination...
reductive; preparation of saccharide-protein conjugates with improved immunogenicity
Drug delivery systems...

saccharide-protein conjugates with improved immunogenicity
CAS REGISTRY NUMBERS:
530-62-1 41864-22-6 68985-05-7 102-09-0 506-68-3 75-44-5 32315-10-9
bifunctional reagent; preparation of saccharide-protein conjugates with improved immunogenicity
375345-20-3 preparation of saccharide-protein conjugates with improved immunogenicity
25895-60-7 reducing agent; preparation of saccharide-protein conjugates with improved immunogenicity

10/7/44 (Item 23 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

140109759 CA: 140(8)109759q JOURNAL
Water accessibility, aggregation, and motional features of polysaccharide-protein conjugate vaccines
AUTHOR(S): Berti, Francesco; Costantino, Paolo; Fragai, Marco; Luchinat, Claudio
LOCATION: IRIS, Chiron SPA, 53100, Siena, Italy
JOURNAL: Biophys. J. (Biophysical Journal) DATE: 2004 VOLUME: 86
NUMBER: 1, Pt. 1 PAGES: 3-9 CODEN: BIOJAU ISSN: 0006-3495 LANGUAGE: English PUBLISHER: Biophysical Society
SECTION:
CA215002 Immunochemistry
IDENTIFIERS: polysaccharide protein conjugate vaccine water hydrodynamics
DESCRIPTORS:
Vaccines...
conjugate; water accessibility, aggregation, and motional features of polysaccharide-protein conjugate vaccines
Aggregation... Hydration,chemical... Molecular dynamics...
Polysaccharides,biological studies... Proteins...
water accessibility, aggregation, and motional features of polysaccharide-protein conjugate vaccines

10/7/45 (Item 24 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

139275732 CA: 139(18)275732z PATENT
Modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
INVENTOR(AUTHOR): Costantino, Paolo; Berti, Francesco; Norelli, Francesco; Bartoloni, Antonella
LOCATION: Italy
ASSIGNEE: Chiron S.r.l.
PATENT: PCT International ; WO 200380678 A1 DATE: 20031002
APPLICATION: WO 2003IB1436 (20030326) *GB 20027117 (20020326) *GB 200220195 (20020830) *GB 200229494 (20021218) *GB 200230163 (20021224)
PAGES: 58 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: C08B-037/00A; A61K-039/385B; A61K-039/095B
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NI; NO; NZ; OM; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IT; LU; MC; NL; PT; RO; SE; SI; SK; TR; BF;

BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG
SECTION:
CA215002 Immunochemistry
CA209XXX Biochemical Methods
CA263XXX Pharmaceuticals
IDENTIFIERS: Neisseria meningitidis capsular saccharide oligosaccharide polysaccharide protein conjugate vaccine
DESCRIPTORS:
Immunostimulants...
adjuvants; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Solvents...
aprotic; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Toxins... Meningitis...
bacterial; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Reagents... Crosslinking agents...
bifunctional; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Functional groups...
blocking; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Drug delivery systems...
carriers; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Proteins... Monosaccharides... Oligosaccharides,biological studies...
Polysaccharides,biological studies...
conjugates; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Toxins...
diphtheria; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Functional groups...
electron-withdrawing; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Stability...
enhancement; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Neisseria meningitidis...
group A; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Neisseria meningitidis...
group C; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Neisseria meningitidis...
group W-135; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Neisseria meningitidis...
group Y; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Glycosides...
linkage; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Monosaccharides... Capsule(microbial)... Oligosaccharides,biological studies... Polysaccharides,biological studies... Hydroxyl group... Amino group... Bacteria(Eubacteria)... Vaccines... Antibodies... Mammalia... Amines,biological studies... Glycoconjugates...
modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Functional groups...
nitrogen-protecting; modified polysaccharide-protein conjugates having

improved stability in water for use as vaccines
Solvents...
organic; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Functional groups...
phosphodiester, bond; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
Carbohydrates,biological studies...
sugar phosphates; modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
CAS REGISTRY NUMBERS:
67-68-5 68-12-2 75-12-7 680-31-9 biological studies, modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
1608-26-0 7226-23-5 127-19-5 530-62-1 41864-22-6 23814-12-2 102-09-0 506-68-3 75-44-5 32315-10-9 600173-37-3 7784-30-7 modified polysaccharide-protein conjugates having improved stability in water for use as vaccines

10/7/46 (Item 25 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

138121627 CA: 138(9)121627m PATENT
Purification of bacterial capsular polysaccharide for use in combination vaccines
INVENTOR(AUTHOR): Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Chiron S.P.A.
PATENT: PCT International ; WO 200307985 A2 DATE: 20030130
APPLICATION: WO 2002IB3191 (20020620) *GB 2001151776 (20010620)
PAGES: 49 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-039/02A; A61K-039/095B; A61K-039/385B; A61P-031/04B
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NO; NZ; OM; PH; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG
SECTION:
CA215002 Immunochemistry
CA209XXX Biochemical Methods
CA263XXX Pharmaceuticals
IDENTIFIERS: Neisseria meningitidis capsular polysaccharide purifn solubilization protein conjugate vaccine
DESCRIPTORS:
Immunostimulants...
adjuvants; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Polysaccharides,biological studies...
capsular; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Drug delivery systems...
carriers; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Proteins...
conjugates; purification of Neisseria meningitidis capsular polysaccharide

for use in combination vaccines
Toxoids...
diphtheria, CRM197; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Drug delivery systems...
freeze-dried; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Neisseria meningitidis...
group A; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Neisseria meningitidis...
group B; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Neisseria meningitidis...
group C; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Neisseria meningitidis...
group W-135; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Neisseria meningitidis...
group Y; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Buffers...
histidine; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Drug delivery systems...
liqs.; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Carbohydrates,biological studies...
MenA and MenC; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Physiological saline solutions...
phosphate-buffered; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Bacteria(Eubacteria)... Solubilization... Precipitation(chemical)...
Neisseria meningitidis... Alcohols,biological studies... Ultrafiltration...
Haemophilus influenzae... Streptococcus pneumoniae... Hydrolysis...
Oligosaccharides,biological studies... Carriers... Biochemical molecules...
Antigens... Vaccines... Solvents...
purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
Filtration...
size; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
CAS REGISTRY NUMBERS:
7440-44-0 biological studies, activated; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
71-00-1 biological studies, buffer; purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
64-17-5 21645-51-2 7732-18-5 biological studies, purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines
57-09-0 7784-30-7 purification of Neisseria meningitidis capsular polysaccharide for use in combination vaccines

10/7/47 (Item 26 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

137045615 CA: 137(4)45615t JOURNAL
Isolation of oligosaccharides from a partial-acid hydrolysate of pneumococcal type 3 polysaccharide for use in conjugate vaccines

AUTHOR(S): Lefeber, Dirk J.; Gutierrez Gallego, Ricardo; Grun, Christian H.; Proietti, Daniela; D'Ascenzi, Sandro; Costantino, Paolo; Kamerling, Johannis P.; Vliegenthart, Johannes F. G.
LOCATION: Department of Bio-Organic Chemistry, Utrecht University, Bijvoet Center, 3508 TB, Utrecht, Neth.
JOURNAL: Carbohydr. Res. (Carbohydrate Research) DATE: 2002 VOLUME: 337 NUMBER: 9 PAGES: 819-825 CODEN: CRBRAT ISSN: 0008-6215
PUBLISHER ITEM IDENTIFIER: 0008-6215(02)00059-9 LANGUAGE: English
PUBLISHER: Elsevier Science Ltd.
SECTION:
CA215001 Immunochemistry
CA209XXX Biochemical Methods
CA233XXX Carbohydrates
IDENTIFIERS: Streptococcus carbohydrate oligosaccharide isolation conjugate vaccine
DESCRIPTORS:
Hydrolysis...
acid; oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide for use in neoglycoprotein vaccines
Polysaccharides,biological studies...
capsular; oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide for use in neoglycoprotein vaccines
Glycoproteins...
neoglycoproteins; oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide for use in neoglycoprotein vaccines
Oligosaccharides,biological studies... Vaccines...
oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide for use in neoglycoprotein vaccines
Ion exchange chromatography...
oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide fractionated by
Anion exchange chromatography... pH...
oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide purified by
Amperometry...
pulsed; oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide purified by
Streptococcus pneumoniae...
type 3; oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide for use in neoglycoprotein vaccines
CAS REGISTRY NUMBERS:
158129-72-7 oligosaccharide isolation from a partial-acid hydrolyzate of pneumococcal type 3 polysaccharide purified by
184867-28-5 repeating unit; oligosaccharides containing one to seven repeating units of

10/7/48 (Item 27 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

132034363 CA: 132(4)34363e JOURNAL
Size determination of bacterial capsular oligosaccharides used to prepare conjugate vaccines
AUTHOR(S): Ravenscroft, Neil; Averani, Giovanni; Bartoloni, Antonella; Berti, Stefania; Bigio, Massimo; Carinci, Valeria; Costantino, Paolo; D'Ascenzi, Sandro; Giannozzi, Aldo; Norelli, Francesco; Pennatini, Carlo; Proietti, Daniela; Ceccarini, Costante; Cescutti, Paola
LOCATION: Chiron Vaccines SpA, I-53100, Siena, Italy
JOURNAL: Vaccine DATE: 1999 VOLUME: 17 NUMBER: 22 PAGES: 2802-2816
CODEN: VACCDE ISSN: 0264-410X PUBLISHER ITEM IDENTIFIER:

0264-410X(99)00092-4 LANGUAGE: English PUBLISHER: Elsevier Science Ltd.
SECTION:
CA215001 Immunochemistry
IDENTIFIERS: bacteria capsule oligosaccharide size detn colorimetric assay vaccine
DESCRIPTORS:
Polysaccharides,biological studies...
capsular; colorimetric assays for determination of the size of bacterial capsular oligosaccharides used to prepare conjugate vaccines
Bacteria(Eubacteria)... Neisseria meningitidis...
Oligosaccharides,biological studies... Vaccines...
colorimetric assays for determination of the size of bacterial capsular oligosaccharides used to prepare conjugate vaccines
Haemophilus influenzae...
type b; colorimetric assays for determination of the size of bacterial capsular oligosaccharides used to prepare conjugate vaccines

10/7/49 (Item 28 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

131078310 CA: 131(6)78310u JOURNAL
Size fractionation of bacterial capsular polysaccharides for their use in conjugate vaccines
AUTHOR(S): Costantino, Paolo; Norelli, Francesco; Giannozzi, Aldo; D'Ascenzi, Sandro; Bartoloni, Antonella; Kaur, Surinder; Tang, Dazhi; Seid, Robert; Viti, Stefano; Paffetti, Roberto; Bigio, Massimo; Pennatini, Carlo; Averani, Giovanni; Guarnieri, Valentina; Gallo, Eugenia; Ravenscroft, Neil; Lazzeroni, Carla; Rappuoli, Rino; Ceccarini, Costante
LOCATION: Chiron Vaccines SpA, 53100, Siena, Italy
JOURNAL: Vaccine DATE: 1999 VOLUME: 17 NUMBER: 9-10 PAGES: 1251-1263
CODEN: VACCDE ISSN: 0264-410X PUBLISHER ITEM IDENTIFIER:
0264-410X(98)00348-X LANGUAGE: English PUBLISHER: Elsevier Science Ltd.
SECTION:
CA263006 Pharmaceuticals
CA215XXX Immunochemistry
IDENTIFIERS: bacteria capsule polysaccharide antigen fractionation vaccine
DESCRIPTORS:
Vaccines...
conjugate; size fractionation of bacterial capsular polysaccharides for use in conjugate vaccines
Neisseria meningitidis...
groups A and C; size fractionation of bacterial capsular polysaccharides for use in conjugate vaccines
Capsule(microbial)... Polysaccharides,biological studies...
size fractionation of bacterial capsular polysaccharides for use in conjugate vaccines
Haemophilus influenzae...
type b; size fractionation of bacterial capsular polysaccharides for use in conjugate vaccines

10/7/50 (Item 29 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

130050998 CA: 130(5)50998e JOURNAL
A competitive enzyme-linked immunosorbent assay for measuring the levels of serum antibody to Haemophilus influenzae type b
AUTHOR(S): Mariani, Massimo; Luzzi, Enrico; Proietti, Daniela; Mancianti,

Silvia; Casini, Daniele; Costantino, Paolo; Van Gageldonk, Pieter; Berbers, Guy
  LOCATION: Laboratorio di Immunochimica e Sierologia Sperimentale, Dipartimento Immunologia, Centro Ricerche, I-53100, Siena, Italy
  JOURNAL: Clin. Diagn. Laboratory Immunol. DATE: 1998 VOLUME: 5 NUMBER: 5
  PAGES: 667-674 CODEN: CDIMEN ISSN: 1071-412X LANGUAGE: English
  PUBLISHER: American Society for Microbiology
  SECTION:
    CA215001 Immunochemistry
  IDENTIFIERS: ELISA antibody Haemophilus capsular polysaccharide
  DESCRIPTORS:
Blood analysis... Capsular polysaccharides...
    competitive ELISA for measuring human serum antibody to Haemophilus influenzae type b capsular polysaccharide
Vaccines...
    competitive ELISA for measuring human serum antibody to Haemophilus influenzae type b capsular polysaccharide in relation to
Antibodies... ELISA(immunosorbent assay)...
    competitive ELISA for measuring serum antibody to Haemophilus influenzae type b capsular polysaccharide
Serum albumin...
    conjugates, with Haemophilus capsular polysaccharide; for competitive ELISA measuring human serum antibody to Haemophilus influenzae type b
Capsular polysaccharides...
    conjugates, with human serum albumin; for competitive ELISA measuring human serum antibody to Haemophilus influenzae type b
Microtiter plates...
    precoated; with HSA-polysaccharide conjugate for competitive ELISA measuring human serum antibody to Haemophilus influenzae type b
Haemophilus influenzae...
    type b; competitive ELISA for measuring human serum antibody to Haemophilus influenzae type b capsular polysaccharide

 10/7/51   (Item 30 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

  125056224   CA: 125(5)56224t   PATENT
  Combined meningitis vaccine
  INVENTOR(AUTHOR): Ceccarini, Costante; Costantino, Paolo; D'Ascenzi, Sandro; Norelli, Francesco; Giannozzi, Aldo
  LOCATION: Italy
  ASSIGNEE: Biocine S.P.A.
  PATENT: PCT International ; WO 9614086 A1 DATE: 960517
  APPLICATION: WO 95IB1006 (951102) *GB 9422096 (941102)
  PAGES: 32 pp. CODEN: PIXXD2 LANGUAGE: English
  PATENT CLASSIFICATIONS:
    CLASS: A61K-039/02A; A61K-039/095B; A61K-039/102B
  DESIGNATED COUNTRIES: CA; JP; US DESIGNATED REGIONAL: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE
  SECTION:
    CA215002 Immunochemistry
  IDENTIFIERS: meningitis vaccine Hib MenC oligosaccharide conjugate, MenB oligosaccharide conjugate meningitis vaccine, DTP vaccine priming meningitis Hib MenC
  DESCRIPTORS:
Haemophilus influenzae,type b... Meningitis... Vaccines...
    combined vaccine for bacterial meningitis comprises Hib, MenC and MenB oligosaccharide conjugates
Diphtheria... Tetanus... Whooping cough...
    DTP vaccine; combined vaccine for bacterial meningitis comprises Hib,

MenC and MenB oligosaccharide conjugates
Oligosaccharides,complexes...
of Haemophilus influenzae type B and Neisseria meningitidis serotype B and C; combined vaccine for bacterial meningitis comprises Hib, MenC and MenB oligosaccharide conjugates
Neisseria meningitidis...
serotype B and C; combined vaccine for bacterial meningitis comprises Hib, MenC and MenB oligosaccharide conjugates

10/7/52 (Item 31 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

123065627 CA: 123(6)65627n JOURNAL
Immunogenicity of meningococcal B polysaccharide conjugated to tetanus toxoid or CRM197 via adipic acid dihydrazide
AUTHOR(S): Bartoloni, Antonella; Norelli, Francesco; Ceccarini, Costante; Rappuoli, Rino; Costantino, Paolo
LOCATION: Biocine Research Center, IRIS, 53100, Siena, Italy
JOURNAL: Vaccine DATE: 1995 VOLUME: 13 NUMBER: 5 PAGES: 463-70
CODEN: VACCDE ISSN: 0264-410X LANGUAGE: English
SECTION:
CA263003 Pharmaceuticals
CA215XXX Immunochemistry
IDENTIFIERS: vaccine Neisseria polysaccharide carrier protein
DESCRIPTORS:
Toxoids,tetanus...
conjugates; immunogenicity of meningococcal B polysaccharide conjugated to tetanus toxoid or CRM197 via adipic acid dihydrazide
Neisseria meningitidis,group B... Polysaccharides,conjugates,biological studies... Proteins,specific or class, CRM 197, conjugates...
Toxins,diphtheria... Vaccines...
immunogenicity of meningococcal B polysaccharide conjugated to tetanus toxoid or CRM197 via adipic acid dihydrazide
CAS REGISTRY NUMBERS:
1071-93-8 immunogenicity of meningococcal B polysaccharide conjugated to tetanus toxoid or CRM197 via adipic acid dihydrazide

10/7/53 (Item 32 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

119269016 CA: 119(25)269016q PATENT
Conjugates formed from heat-shock proteins and oligo- or polysaccharides for vaccine against bacterial infection
INVENTOR(AUTHOR): Rappuoli, Rino; Costantino, Paolo; Viti, Stefano; Norelli, Francesco
LOCATION: Italy
ASSIGNEE: Biocine Sclavo SPA
PATENT: PCT International ; WO 9317712 A2 DATE: 930916
APPLICATION: WO 93EP516 (930308) *IT 92FI58 (920306)
PAGES: 69 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-047/48A; C07K-015/00B
DESIGNATED COUNTRIES: AT; AU; BB; BG; BR; CA; CH; CZ; DE; DK; ES; FI; GB; HU; JP; KP; KR; LK; LU; MG; MN; MW; NL; NO; NZ; PL; PT; RO; RU; SD; SE; SK; UA; US DESIGNATED REGIONAL: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU ; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; ML; MR; SN; TD; TG
SECTION:
CA215002 Immunochemistry

IDENTIFIERS: heat shock protein oligosaccharide conjugate vaccine, polysaccharide heat shock protein conjugate vaccine, Helicobacter heat shock protein DNA cloning, sequence Helicobacter heat shock protein
DESCRIPTORS:
Vaccines...
against bacterial infection, conjugates of heat-shock proteins with oligo- or polysaccharides for
Deoxyribonucleic acid sequences... Protein sequences...
for heat-shock protein of Helicobacter pylori
Campylobacter pyloridis...
heat-shock protein of, conjugates with oligo- or polysaccharides, for vaccines against bacterial infection
Proteins,specific or class, heat-shock...
hspR65, conjugates with oligo- or polysaccharides, for vaccines against bacterial infection
Proteins,specific or class, heat-shock...
hspR70, conjugates with oligo- or polysaccharides, for vaccines against bacterial infection
Neisseria meningitidis,group C...
oligosaccharides of, conjugates with heat-shock proteins, for vaccines against bacterial infection
Plasmid and Episome...
pHp60G2 and pHp60G5, heat-shock protein of Helicobacter pylori in relation to
Oligosaccharides,conjugates... Polysaccharides,conjugates,compounds...
with heat-shock proteins, for vaccines against bacterial infection
Proteins,specific or class, heat-shock, complexes...
with oligo- or polysaccharides, for vaccines against bacterial infection
CAS REGISTRY NUMBERS:
151441-76-8 amino acid sequence of and cloning of DNA for, oligo- or polysaccharide conjugates with heat-shock proteins for vaccines in relation to
9026-28-2D heat-shock protein fusion products, of phage MS2, with Helicobacter pylori heat-shock protein
151243-14-0 nucleotide sequence of and cloning of, oligo- or polysaccharide conjugates with heat-shock proteins for vaccines in relation to

10/7/54 (Item 33 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

117210275 CA: 117(21)210275d JOURNAL
Mycobacterial heat-shock proteins as carrier molecules. II: The use of the 70-kDa mycobacterial heat-shock protein as carrier for conjugated vaccines can circumvent the need for adjuvants and Bacillus Calmette Guerin priming
AUTHOR(S): Barrios, Christy; Lussow, Alexander R.; Van Embden, Jan; Van der Zee, Ruurd; Rappuoli, Rino; Costantino, Paolo; Louis, Jacques A.; Lambert, Paul Henri; Del Giudice, Giuseppe
LOCATION: World Health Organ. Immunol. Res. Training Cent., University Geneva, CH-1211, Geneva, Switz.
JOURNAL: Eur. J. Immunol. DATE: 1992 VOLUME: 22 NUMBER: 6 PAGES: 1365-72 CODEN: EJIMAF ISSN: 0014-2980 LANGUAGE: English
SECTION:
CA215002 Immunochemistry
IDENTIFIERS: Mycobacterium heat shock protein vaccine carrier
DESCRIPTORS:
Immunostimulants,adjuvants...
antibody formation to vaccines conjugated to mycobacterial heat-shock

protein carrier after immunization in relation to
Polysaccharides,biological studies...
capsular, of Neisseria meningitidis, mycobacterial heat-shock protein conjugates immunization with, antibody formation induction by, immune adjuvants and BCG priming in relation to
Plasmodium falciparum...
circumsporozoite antigen of, peptide from, mycobacterial heat-shock protein conjugates, immunization with, antibody formation after, immune adjuvants and BCG priming in relation to
Proteins,specific or class, hsp 70...
conjugates, mycobacterial, with vaccines, antibodies to, formation of, immune adjuvants and BCG priming in relation to
Mycobacterium tuberculosis...
heat-shock protein 70 from, as immunostimulatory vaccine carrier
Lymphocyte,T-cell...
in antibody formation to vaccines conjugated to mycobacterial heat-shock protein carrier
Vaccines...
oligosaccharides and peptide conjugates with mycobacterial heat-shock protein carrier in relation to
Neisseria meningitidis...
oligosaccharides from, mycobacterial heat-shock protein conjugates, immunization with, antibody formation induction by, immune adjuvants and BCG priming in relation to
Proteins,specific or class, hsp 65...
preimmunization with, antibody formation to vaccines conjugated to mycobacterial heat-shock protein carrier enhancement by
Antigens,CS (circumsporozoite)...
synthetic peptide from, mycobacterial heat-shock protein conjugates, immunization with, antibody formation induction by, immune adjuvants and BCG priming in relation to
Antibodies...
to vaccines conjugated to mycobacterial heat-shock protein, formation of, immune adjuvants and BCG priming in relation to
Oligosaccharides,conjugates... Peptides,conjugates,compounds...
with heat-shock protein 70 from Mycobacterium, immunostimulation by, vaccines in relation to
CAS REGISTRY NUMBERS:
143180-71-6D mycobacterial heat-shock protein conjugates, immunization with, antibody formation induction by, immune adjuvants and BCG priming in relation to

10/7/55 (Item 34 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

117189760 CA: 117(19)189760w JOURNAL
Development and phase 1 clinical testing of a conjugate vaccine against meningococcus A and C
AUTHOR(S): Costantino, Paolo; Viti, Stefano; Podda, Audino; Velmonte, Melecia Antonio; Nencioni, Luciano; Rappuoli, Rino
LOCATION: Sclavo Res. Dev. Vaccines, 53100, Siena, Italy
JOURNAL: Vaccine DATE: 1992 VOLUME: 10 NUMBER: 10 PAGES: 691-8
CODEN: VACCDE ISSN: 0264-410X LANGUAGE: English
SECTION:
CA215002 Immunochemistry
CA263XXX Pharmaceuticals
IDENTIFIERS: meningococcus vaccine
DESCRIPTORS:
Vaccines...
to meningococcus

Neisseria meningitidis...
vaccine for

10/7/56 (Item 35 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

106125868 CA: 106(16)125868c PATENT
Preparation of glycoproteinic conjugates having trivalent immunogenic activity as vaccines against bacterial infections
INVENTOR(AUTHOR): Porro, Massimo; Costantino, Paolo
LOCATION: Italy
ASSIGNEE: Sclavo S.p.A.
PATENT: European Pat. Appl. ; EP 208375 A2 DATE: 870114
APPLICATION: EP 86201160 (860702) *IT 8521451 (850705)
PAGES: 12 pp. CODEN: EPXXDW LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: A61K-039/116A; A61K-039/385B; C07K-015/14B
DESIGNATED COUNTRIES: AT; BE; CH; DE; FR; GB; LI; LU; NL; SE
SECTION:
CA263003 Pharmaceuticals
IDENTIFIERS: glycoprotein vaccine gram pos neg bacteria
DESCRIPTORS:
Vaccines...
against gram-pos. and gram-neg. bacterial infections, trivalent glycoprotein antigen as
Polysaccharides,biological studies...
capsular, of gram-pos. and gram-neg. bacteria, in trivalent glycoprotein antigen preparation as vaccine against bacterial infection
Toxins,pertussis... Toxoids,tetanus...
conjugates with haptens, preparation of, as vaccine against gram-pos. and gram-neg. bacterial infection
Haptens...
conjugates with proteins, preparation of, as vaccine against gram-pos. and gram-neg. bacterial infection
Glycoproteins,biological studies...
immunogenic, as vaccine against gram-pos. and gram-neg. bacterial infection
Escherichia coli... Haemophilus influenzae... Neisseria meningitidis...
Pseudomonas aeruginosa... Streptococcus pneumoniae...
Streptococcus,β-hemolytic...
oligosaccharidic hapten derived from capsular polysaccharide of, in trivalent glycoprotein antigen preparation as vaccine against bacterial infections
Bacteria,gram-neg.... Bacteria,gram-pos....
oligosaccharidic haptens derived from capsular polysaccharides of, in trivalent glycoprotein antigen preparation as vaccine against bacterial infection
Infection...
vaccines against gram-pos. and gram-neg. bacterial, trivalent glycoprotein antigens as
Proteins,specific or class, CRM 197, conjugates...
with oligosaccharidic haptens, preparation of, as vaccine against gram-pos. and gram-neg. bacterial infection

10/7/57 (Item 36 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

104205102 CA: 104(23)205102x JOURNAL

A molecular model of artificial glycoprotein with predetermined multiple immunodeterminants for gram-positive and gram-negative encapsulated bacteria
AUTHOR(S): Porro, Massimo; Costantino, Paolo; Giovannoni, Franco; Pellegrini, Vittoria; Tagliaferri, Lucia; Vannozzi, Francesca; Viti, Stefano
LOCATION: Bact. Vaccine Dep., Sclavo SpA, 53100, Siena, Italy
JOURNAL: Mol. Immunol. DATE: 1986 VOLUME: 23 NUMBER: 4 PAGES: 385-91
CODEN: MOIMD5 ISSN: 0161-5890 LANGUAGE: English
SECTION:
CA215002 Immunochemistry
CA210XXX MICROBIAL, ALGAL, AND FUNGAL BIOCHEMISTRY
IDENTIFIERS: oligosaccharide protein conjugate bacteria multivalent immunogenicity
DESCRIPTORS:
Antigens... Glycoproteins...
bacterial oligosaccharide-protein CRM 197 conjugate as synthetic, multivalent immunogenicity of, vaccines in relation to
Vaccines...
bacterial oligosaccharide-protein CRM 197 conjugates as, multivalent determinants of
Proteins,CRM 197...
conjugate with Neisseria meningitidis and Streptococcus pneumoniae oligosaccharides, multivalent immunogenicity of, vaccines in relation to
Oligosaccharides...
of Neisseria meningitidis and Streptococcus pneumoniae, conjugates with protein CRM 197, multivalent immunogenicity of, vaccines in relation to
Capsule,microbial...
of Neisseria meningitidis and Streptococcus pneumoniae, oligosaccharides of, conjugates with protein CRM 197, multivalent immunogenicity of, vaccines in relation to
Streptococcus pneumoniae...
oligosaccharides of Neisseria meningitidis and, conjugates with protein CRM 197, multivalent immunogenicity of, vaccines in relation to
Neisseria meningitidis...
oligosaccharides of Streptococcus pneumoniae and, conjugates with protein CRM 197, multivalent immunogenicity of, vaccines in relation to
Toxins,diphtheria...
protein CRM 197 related to, bacterial oligosaccharides conjugates with, multivalent immunogenicity of, vaccines in relation to
? ds

Set	File	Items	Description
	155	72	
	347	1	
	144	24	
	35	0	
	5	38	
	74	5	
	71	30	
	357	10	
	6	0	
	351	48	
	24	29	
	136	0	
	399	6	
	315	0	
	73	77	
	34	64	
	434	0	
S1		404	W135 AND (MENINGOCOCCAL OR MENINGITIDIS OR NEISSERIA)

AND CONJUGATE

	155	72	
	347	1	
	144	3	
	35	0	
	5	10	
	74	1	
	71	1	
	357	10	
	6	0	
	351	48	
	24	2	
	136	0	
	399	1	
	315	0	
	73	6	
	34	22	
	434	0	
S2		177	RD S1 (unique items)
	155	20	
	347	0	
	144	0	
	35	0	
	5	3	
	74	0	
	71	0	
	357	1	
	6	0	
	351	1	
	24	1	
	136	0	
	399	0	
	315	0	
	73	2	
	34	7	
	434	0	
S3		35	S2 NOT PY>2003
	155	20	
	347	0	
	144	0	
	35	0	
	5	3	
	74	0	
	71	0	
	357	1	
	6	0	
	351	1	
	24	1	
	136	0	
	399	0	
	315	0	
	73	2	
	34	7	
	434	0	
S4		35	RD S3 (unique items)
	155	0	
	347	0	
	144	0	
	35	0	
	5	0	
	74	0	
	71	0	

	357	0	
	6	0	
	351	0	
	24	0	
	136	0	
	399	0	
	315	0	
	73	0	
	34	0	
	434	0	
S5		0	AU='COSTANTINO, PAOLA' AND AU='COSTANTINO, PAOLO'
	155	0	
	347	0	
	144	0	
	35	0	
	5	0	
	74	0	
	71	0	
	357	0	
	6	0	
	351	12	
	24	7	
	136	0	
	399	39	
	315	0	
	73	0	
	34	0	
	434	0	
S6		58	AU='BERTI, FRANCESCA' OR AU='BERTI, FRANCESCO'
	155	0	
	347	0	
	144	0	
	35	0	
	5	0	
	74	0	
	71	0	
	357	0	
	6	0	
	351	13	
	24	8	
	136	0	
	399	89	
	315	0	
	73	0	
	34	0	
	434	0	
S7		110	AU='COSTANTINO, PAOLA' OR AU='COSTANTINO, PAOLO'
	155	0	
	347	0	
	144	0	
	35	0	
	5	0	
	74	0	
	71	0	
	357	0	
	6	0	
	351	19	
	24	13	
	136	0	
	399	113	
	315	0	
	73	0	

```
       34          0
      434          0
S8                145   S6 OR S7
      155          0
      347          0
      144          0
       35          0
        5          0
       74          0
       71          0
      357          0
        6          0
      351         17
       24          4
      136          0
      399         40
      315          0
       73          0
       34          0
      434          0
S9                61   S8 AND (CAPSULAR OR POLYSACCHARIDE OR NEISSERIA OR M-
                   ENINGITIDIS)
      155          0
      347          0
      144          0
       35          0
        5          0
       74          0
       71          0
      357          0
        6          0
      351         17
       24          4
      136          0
      399         36
      315          0
       73          0
       34          0
      434          0
S10               57   RD S9  (unique items)
?

---Logging off of Dialog---


? logoff
       19apr11 12:45:31 User226352 Session D1308.2
     $1.98  Estimated cost File155
     $5.08  Estimated cost File347
     $2.64  Estimated cost File144
     $0.48  Estimated cost File35
     $2.97  Estimated cost File5
     $0.75  Estimated cost File74
     $4.83  Estimated cost File71
     $4.78  Estimated cost File357
     $0.66  Estimated cost File6
   $433.97  Estimated cost File351
    $14.22  Estimated cost File24
     $0.46  Estimated cost File136
   $128.54  Estimated cost File399
     $0.67  Estimated cost File315
    $12.97  Estimated cost File73
```

```
    $28.92  Estimated cost File34
     $2.40  Estimated cost File434
            OneSearch, 17 files, 11.852 DialUnits FileOS
     $3.22  TELNET
   $649.54  Estimated cost this search
   $649.59  Estimated total session cost  12.115 DialUnits
Logoff: level 05.31.00 D  12:45:31
```